

## CHAPTER 4

### POINT AND NONPOINT SOURCE CHARACTERIZATION OF THE COLLINS RIVER WATERSHED

#### 4.1 Background.

#### 4.2. Characterization of HUC-10 Subwatersheds

4.2.A. 0513010701 (Collins River)

4.2.B. 0513010702 (Barren Fork River)

4.2.C. 0513010703 (Hickory Creek)

4.2.D. 0513010704 (Collins River)

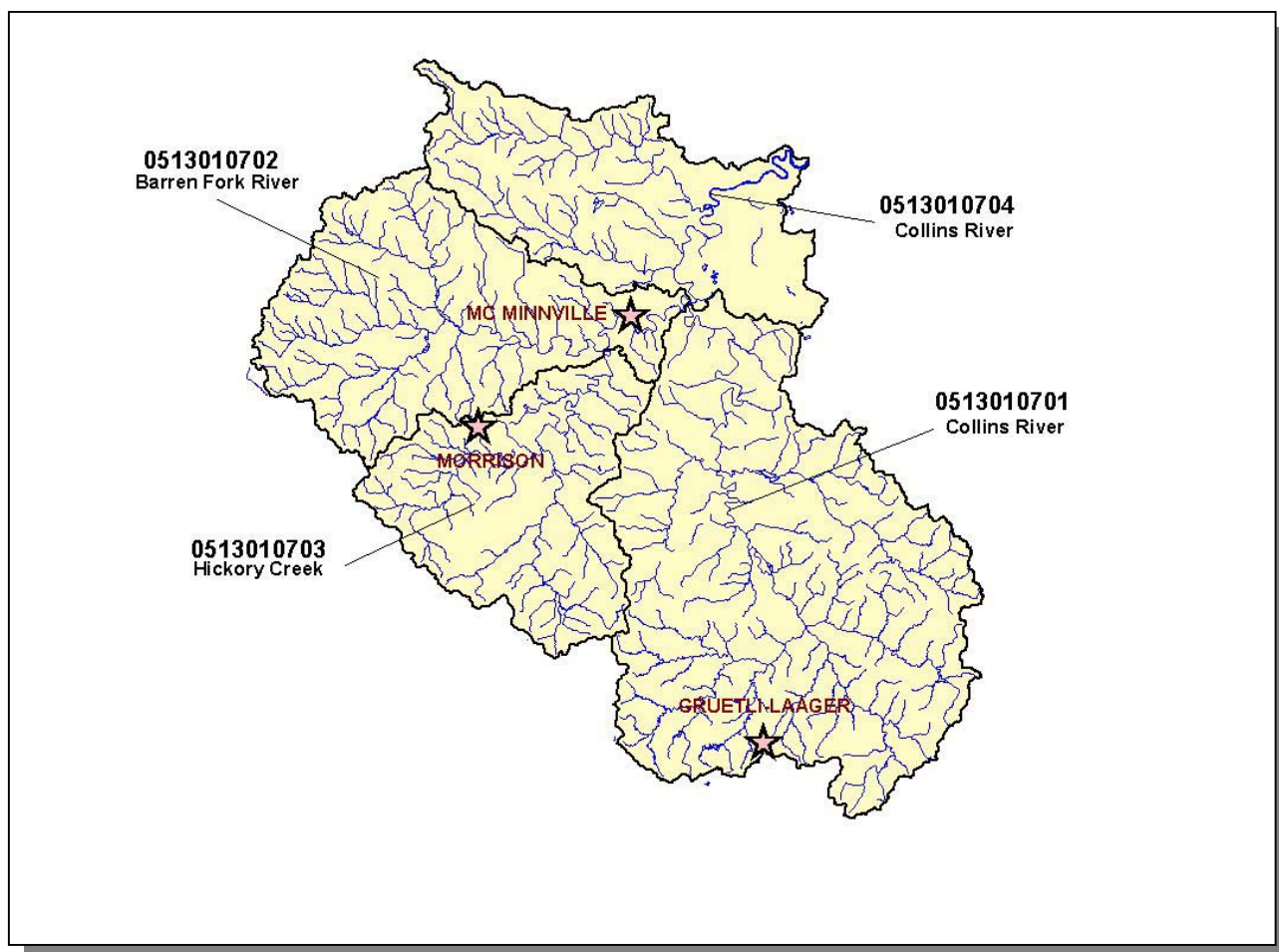
**4.1. BACKGROUND.** This chapter is organized by HUC-10 subwatershed, and the description of each subwatershed is divided into four parts:

- i. General description of the subwatershed
- ii. Description of point source contributions
- ii.a. Description of facilities discharging to water bodies listed on the 1998 303(d) list
- iii. Description of nonpoint source contributions

The Collins River Watershed (HUC 05130107) has been delineated into four HUC 10-digit subwatersheds.

Information for this chapter was obtained from databases maintained by the Division of Water Pollution Control or provided in the WCS (Watershed Characterization System) data set. The WCS used was version 1.1 beta (developed by Tetra Tech, Inc for EPA Region 4) released in 2000.

WCS integrates with ArcView® v3.2 and Spatial Analyst® v1.1 to analyze user-delineated (sub)watersheds based on hydrologically connected water bodies. Reports are generated by integrating WCS with Microsoft® Word. Land Use/Land Cover information from 1992 MRLC (Multi-Resolution Land Cover) data are calculated based on the proportion of county-based land use/land cover in user-delineated (sub)watersheds. Nonpoint source data in WCS are based on agricultural census data collected 1992–1998; nonpoint source data were reviewed by Tennessee NRCS staff.



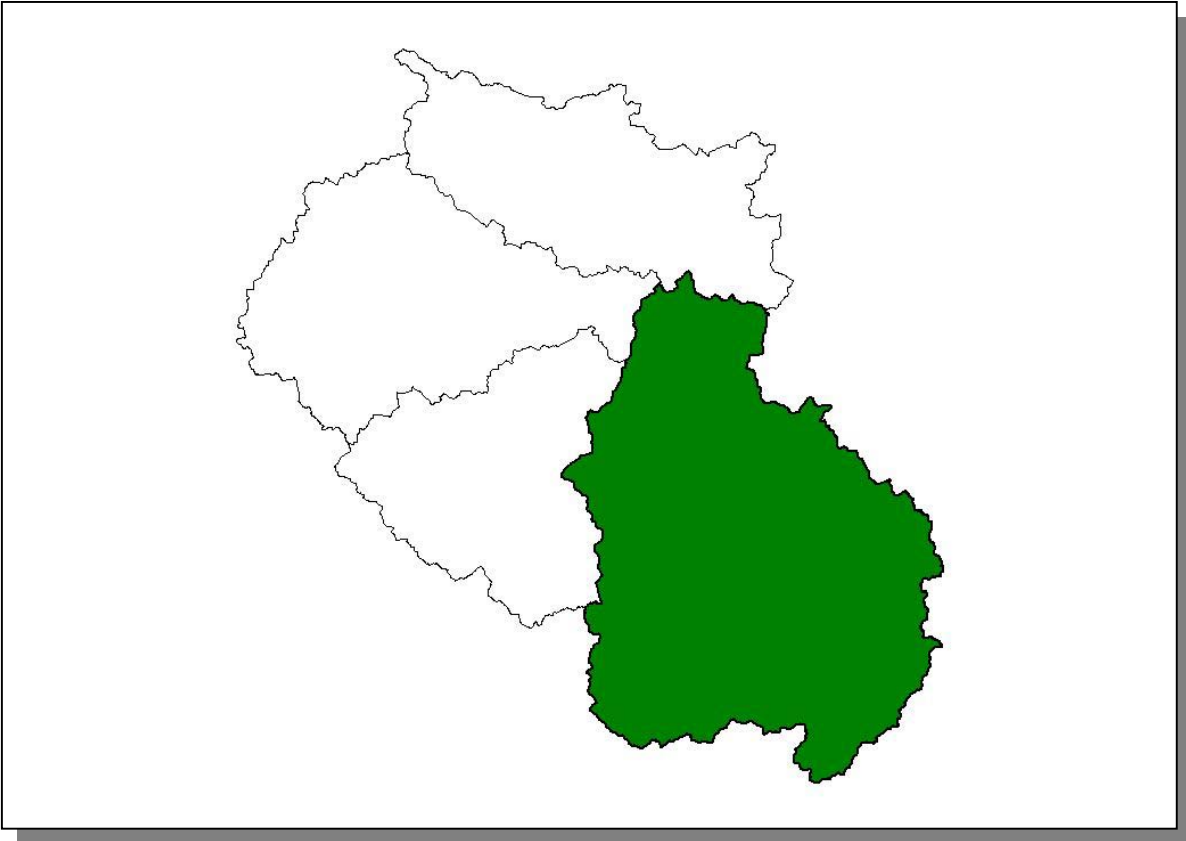
**Figure 4-1. The Collins River Watershed is Composed of Four USGS-Delineated Subwatersheds (10-Digit Subwatersheds).** Locations of Gruetli-Laager, McMinnville, and Morrison are shown for reference.

**4.2. CHARACTERIZATION OF HUC-10 SUBWATERSHEDS.** The Watershed Characterization System (WCS) software and data sets provided by EPA Region IV were used to characterize each subwatershed in the Collins River Watershed.

HUC-10	HUC-12
0513010701	051301070101 (Collins River)
	051301070102 (Big Creek)
	051301070103 (Savage Creek)
	051301070104 (Collins River)
	051301070105 (Scott Creek)
	051301070106 (Spring Creek)
	051301070107 (Collins River)
0513010702	051301070201 (Bullpen Creek)
	051301070202 (Duke Creek)
	051301070203 (Barren Fork River)
	051301070204 (Barren Fork River)
0513010703	051301070301 (Little Hickory Creek)
	051301070302 (West Fork Hickory Creek)
	051301070303 (Hickory Creek)
0513010704	051301070401 (Collins River)
	051301070402 (Charles Creek)
	051301070403 (Mountain Creek)

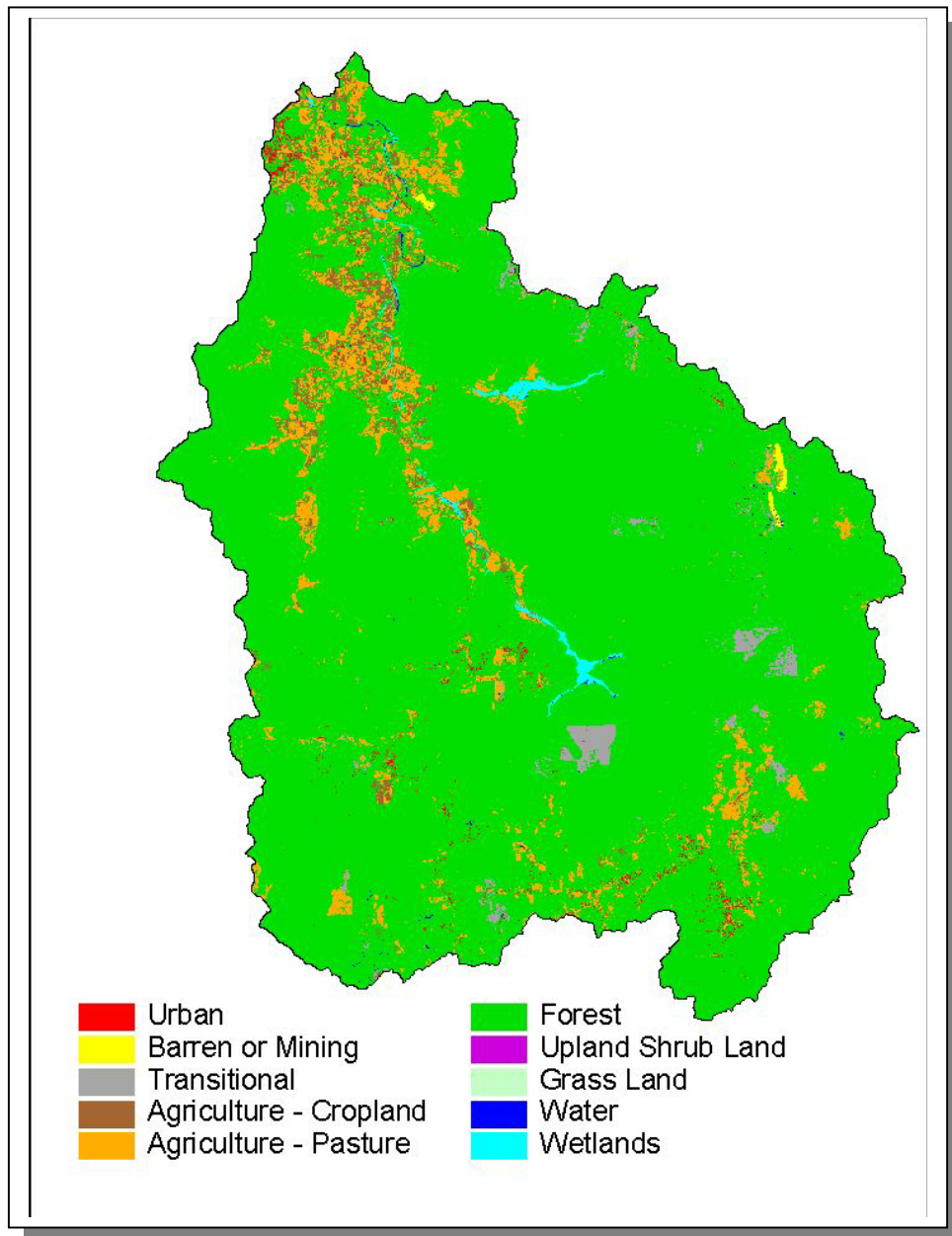
**Table 4-1. HUC-12 Drainage Areas are Nested Within HUC-10 Drainages.** NRCS worked with USGS to delineate the HUC-10 and HUC-12 drainage boundaries.

**4.2.A. 0513010701.**

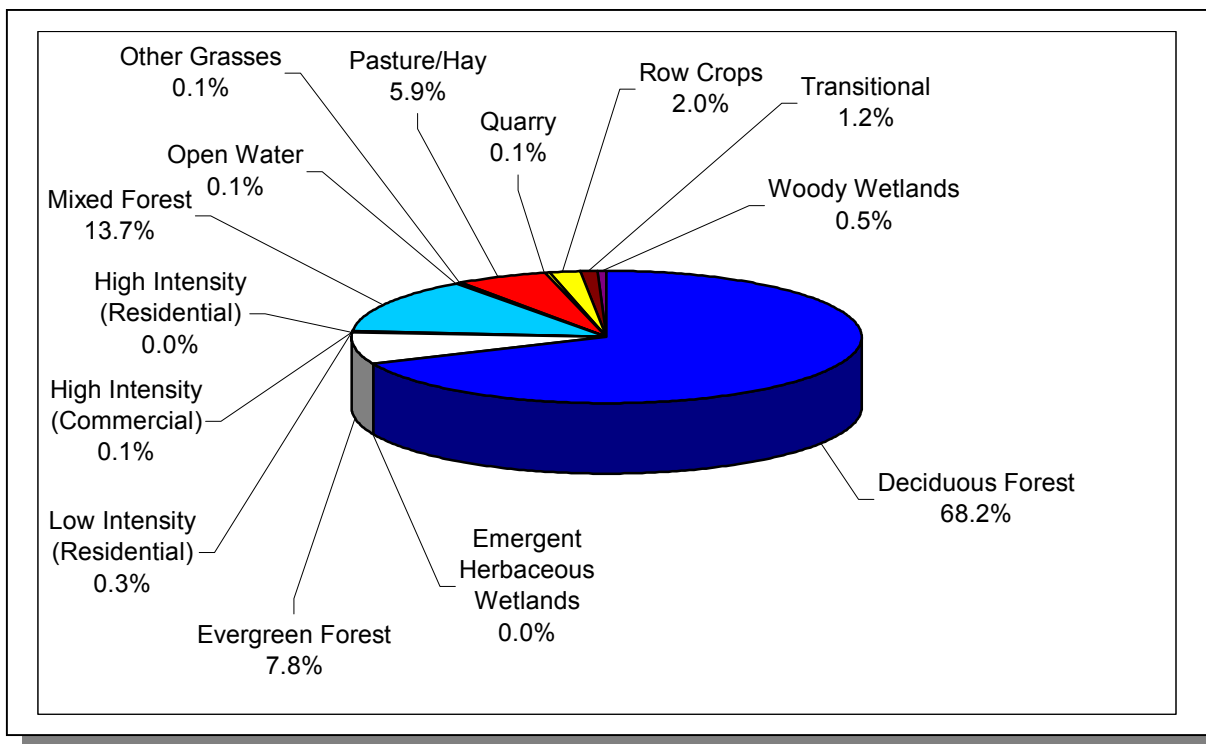


**Figure 4-2. Location of Subwatershed 0513010701.** All Collins HUC-10 subwatershed boundaries are shown for reference.

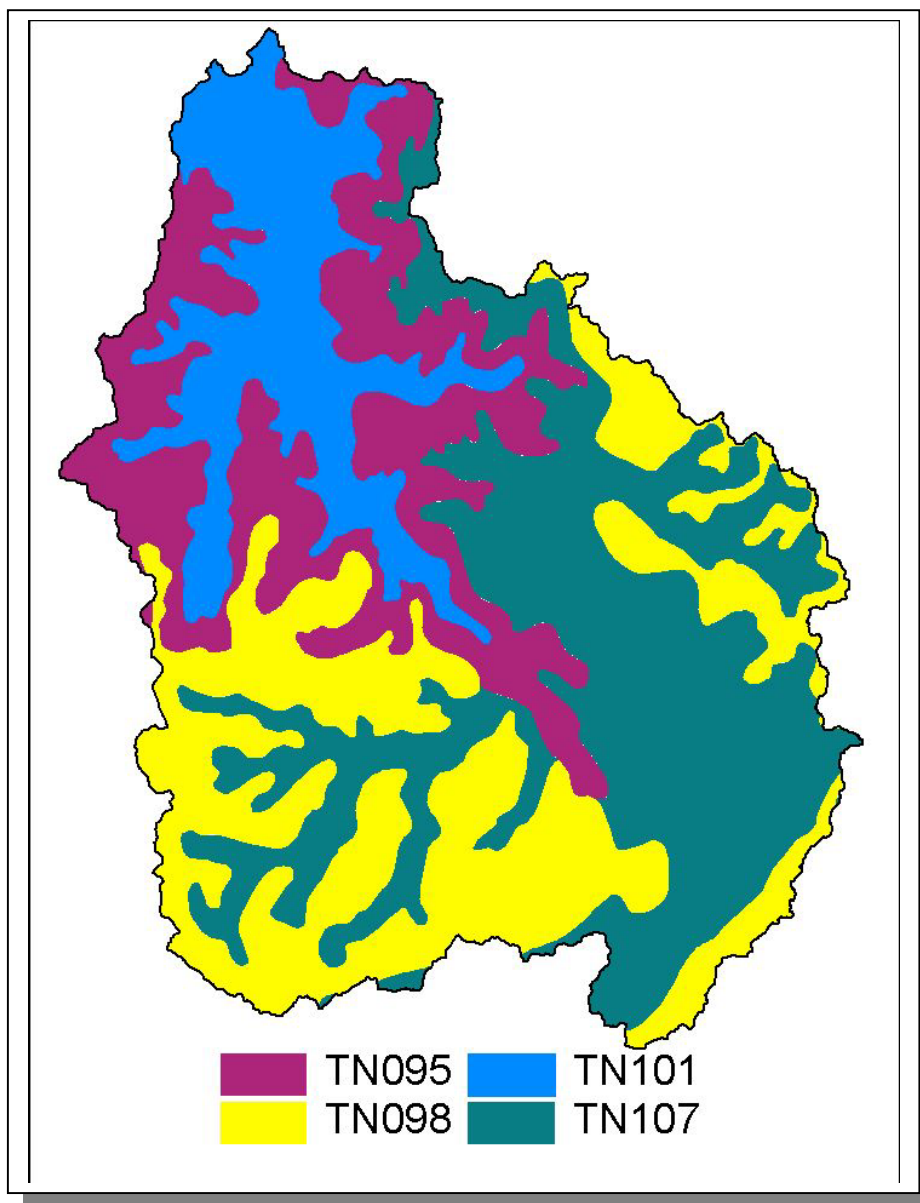
**4.2.A.i. General Description.**



**Figure 4-3. Illustration of Land Use Distribution in Subwatershed 0513010701.**



**Figure 4-4. Land Use Distribution in Subwatershed 0513010701.** More information is provided in Collins-Appendix IV.



**Figure 4-5. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 0513010701.**

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN095	0.00	B	2.35	5.12	Loam	0.31
TN098	1.00	C	3.98	4.82	Loam	0.32
TN101	0.00	B	1.71	5.39	Loam	0.35
TN107	1.00	C	6.34	4.84	Loam	0.28

**Table 4-2. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 0513010701.** More details are provided in Collins-Appendix IV.

County	COUNTY POPULATION		Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED		PERCENT CHANGE
	1990	1997 Est.		1990	1997	
Grundy	13,362	14,012	53.24	7,113	7,459	4.9
Marion	24,860	26,674	0.17	42	45	7.1
Sequatchie	8,863	10,119	14.74	1,307	1,492	14.2
VanBuren	4,846	5,060	0.17	8	9	12.5
Warren	32,992	35,777	21.66	7,145	7,748	8.4
<b>Totals</b>	<b>84,923</b>	<b>91,642</b>		<b>15,615</b>	<b>16,753</b>	<b>7.3</b>

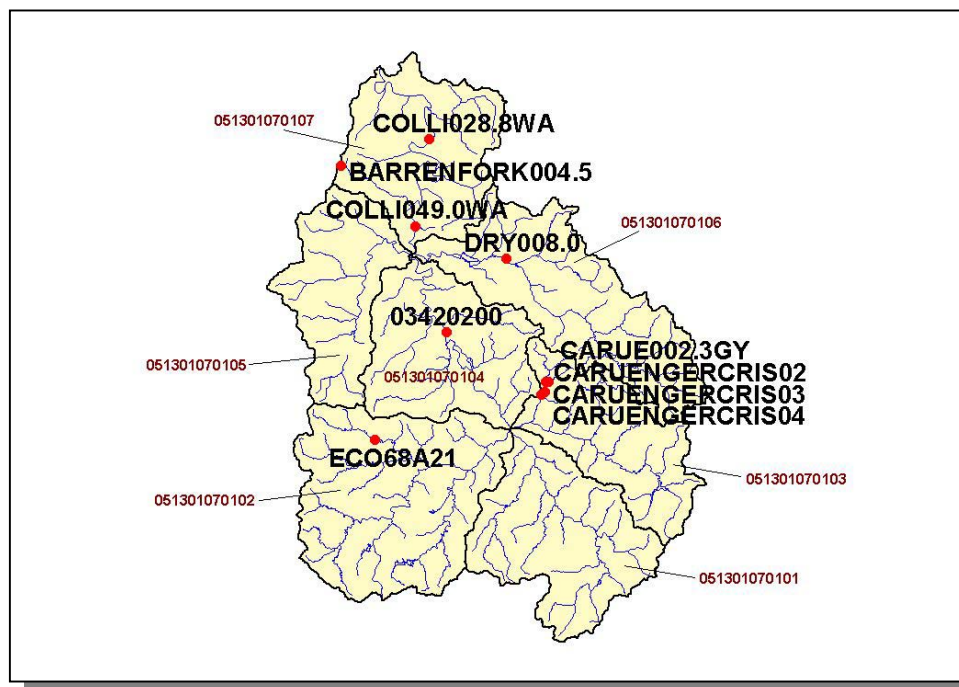
*Table 4-3. Population Estimates in Subwatershed 0513010701.*

Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
McMinnville	Warren	11,194	5,123	4,746	353	24
Altamont	Grundy	648	260	0	246	14
Beersheba Springs	Grundy	608	286	15	263	8
Coalmont	Grundy	857	300	4	268	28
Gruetli-Laager	Grundy	1,810	680	15	633	32
Palmer	Grundy	804	301	8	275	18
<b>Total</b>		<b>15,921</b>	<b>6,950</b>	<b>4,788</b>	<b>2,038</b>	<b>124</b>

*Table 4-4. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 0513010701.*

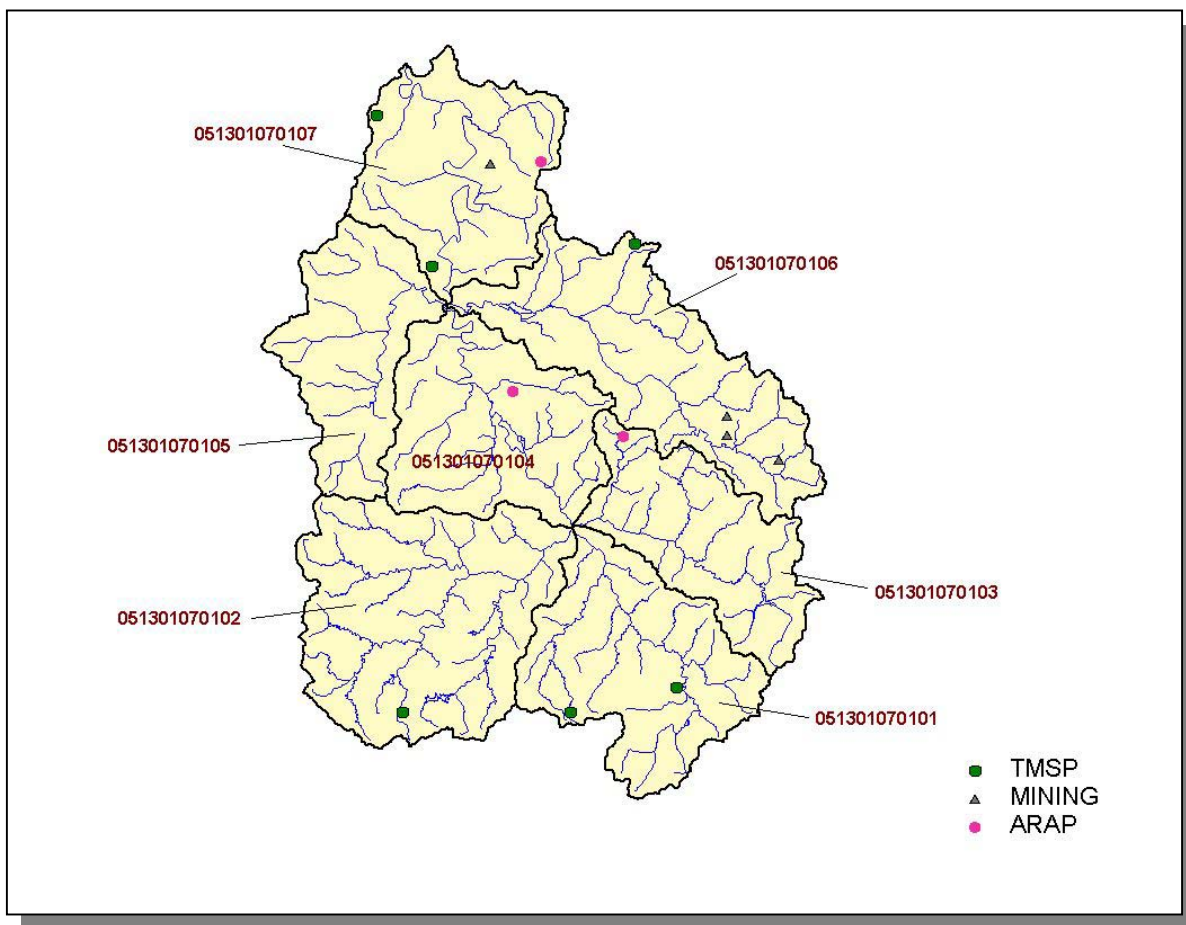


**Figure 4-6. Location of Historical Streamflow Data Collection Sites in Subwatershed 0513010701.** Subwatershed 051301070101, 051301070102, 051301070103, 051301070104, 051301070105, 051301070106, and 051301070107 boundaries are shown for reference. More information is provided in Collins-Appendix IV.

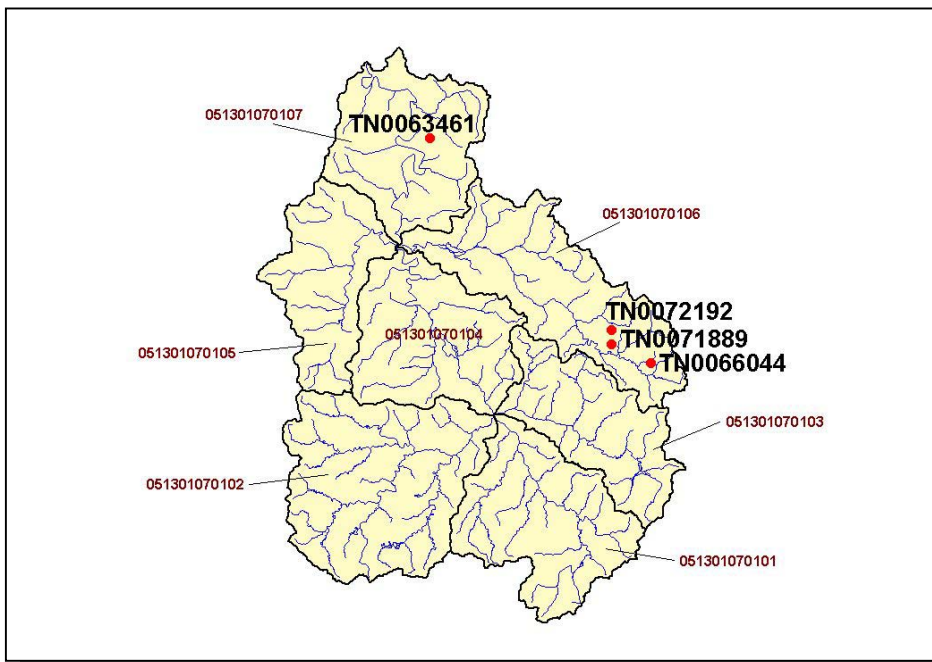


**Figure 4-7. Location of STORET Monitoring Sites in Subwatershed 0513010701.** Subwatershed 051301070101, 051301070102, 051301070103, 051301070104, 051301070105, 051301070106, and 051301070107 boundaries are shown for reference. More information is provided in Collins-Appendix IV.

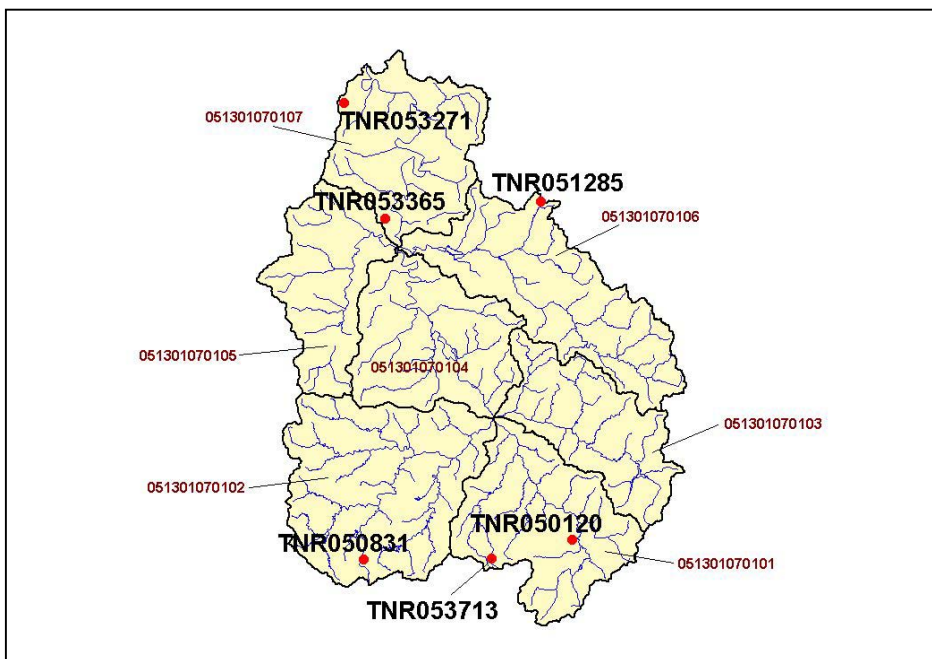
**4.2.A.ii.** Point Source Contributions.



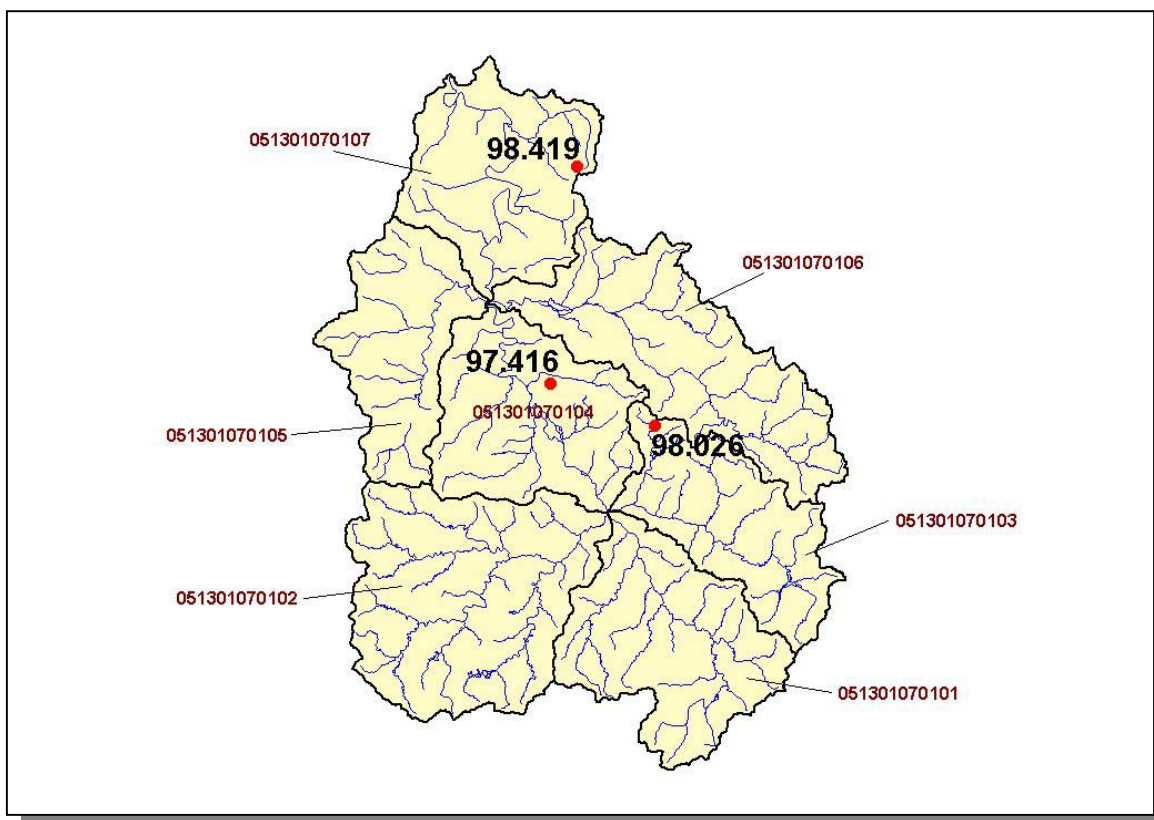
**Figure 4-8. Location of Active Point Source Facilities in Subwatershed 0513010701.** Subwatershed 051301070101, 051301070102, 051301070103, 051301070104, 051301070105, 051301070106, and 051301070107 boundaries are shown for reference. More information is provided in the following figures.



**Figure 4-9. Location of Active Mining Sites in Subwatershed 0513010701.** Subwatershed 051301070101, 051301070102, 051301070103, 051301070104, 051301070105, 051301070106, and 051301070107 boundaries are shown for reference. More information, including the names of facilities, is provided in Collins-Appendix IV.



**Figure 4-10. Location of TMSP Facilities in Subwatershed 0513010701.** Subwatershed 051301070101, 051301070102, 051301070103, 051301070104, 051301070105, 051301070106, and 051301070107 boundaries are shown for reference. More information, including the names of facilities, is provided in Collins-Appendix IV.



**Figure 4-11. Location of ARAP Sites (Individual Permits) in Subwatershed 0513010701.** Subwatershed 051301070101, 051301070102, 051301070103, 051301070104, 051301070105, 051301070106, and 051301070107 boundaries are shown for reference. More information, including the names of facilities, is provided in Collins-Appendix IV.

**4.2.A.iii.** Nonpoint Source Contributions.

<b>LIVESTOCK (COUNTS)</b>						
Beef Cow	Cattle	Milk Cow	Chickens	Chickens Sold	Hogs	Sheep
3,046	6,597	373	8	4,403,940	784	10

Table 4-5. Summary of Livestock Count Estimates in Subwatershed 0513010701. According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.

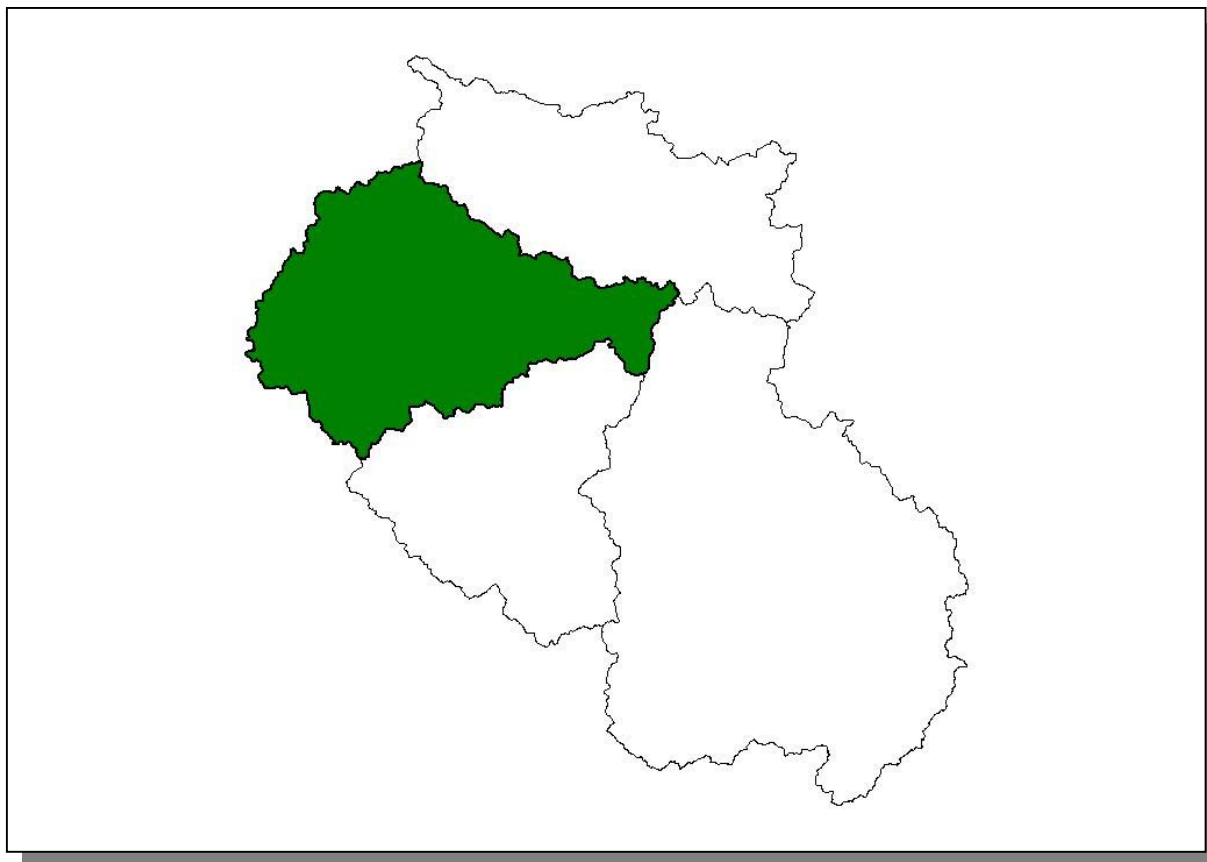
County	<b>INVENTORY</b>		<b>REMOVAL RATE</b>	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Grundy	174.5	165.9	5.6	17.7
Sequatchie	137.3	137.3	0.6	1.2
Van Buren	145.0	135.4	2.3	9.5
Warren	93.6	93.6	2.4	10.1
<b>Totals</b>	<b>550.4</b>	<b>532.2</b>	<b>10.9</b>	<b>38.5</b>

**Table 4-6. Forest Acreage and Annual Removal Rates (1987-1994) in Subwatershed 0513010701.**

<b>CROPS</b>	<b>TONS/ACRE/YEAR</b>
Corn (Row Crops)	5.89
Soybeans (Row Crops)	8.97
Grass (Hayland)	5.56
Legume/Grass (Hayland)	1.52
Grass (Pastureland)	0.53
Legume (Hayland)	0.10
Grass, Forbs, Legumes (Mixed Pasture)	0.51
Forest Land (Grazed)	0.00
Forest Land (Not Grazed)	0.00
Farmsteads and Ranch Headquarters	0.22
Nonagricultural Land Use	0.00
Conservation Reserve Program Land	0.33
Wheat (Close Grown Cropland)	10.12
Other (Horticultural)	7.71
Other Vegetables and Truck Crop	7.28

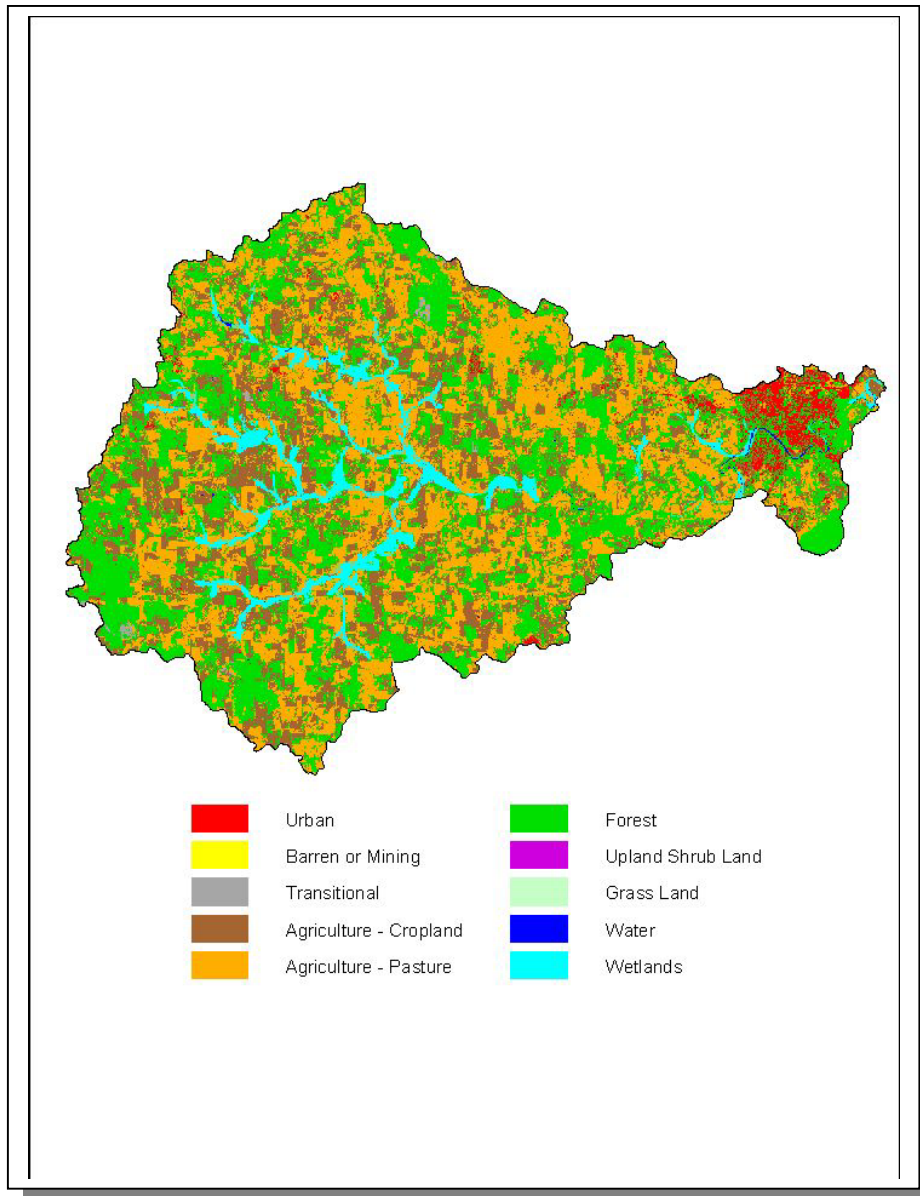
**Table 4-7. Annual Estimated Total Soil Loss in Subwatershed 0513010701.**

**4.2.B. 0513010702.**

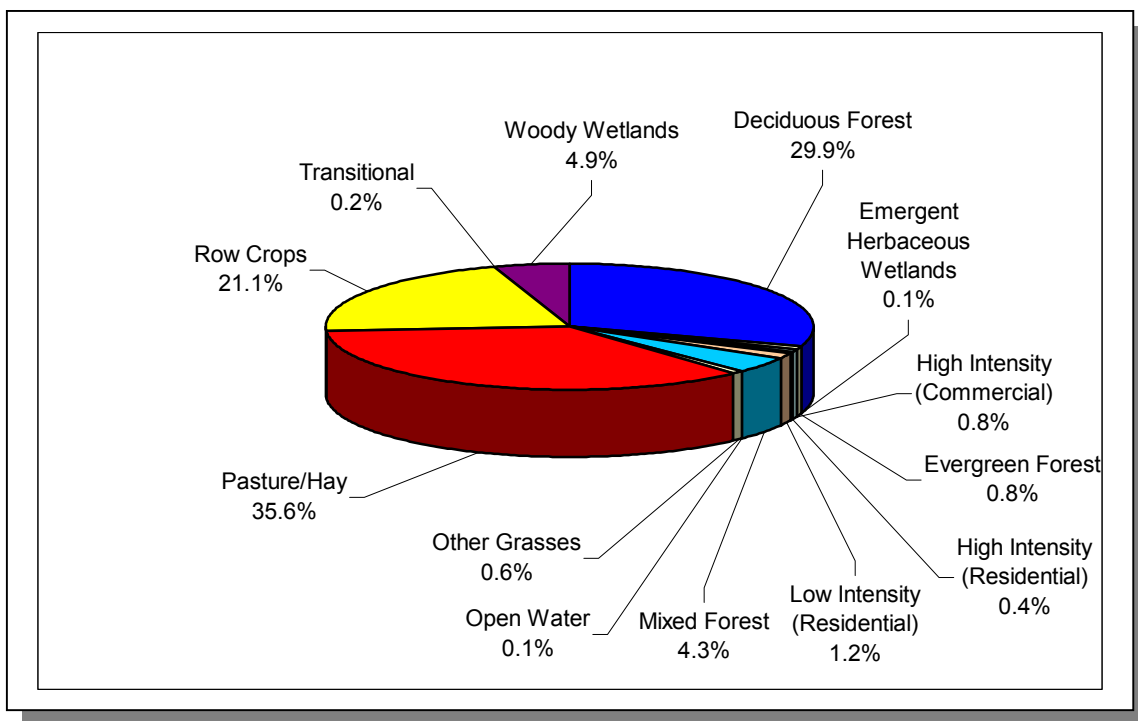


**Figure 4-12. Location of Subwatershed 0513010702.** All Collins HUC-10 subwatershed boundaries are shown for reference.

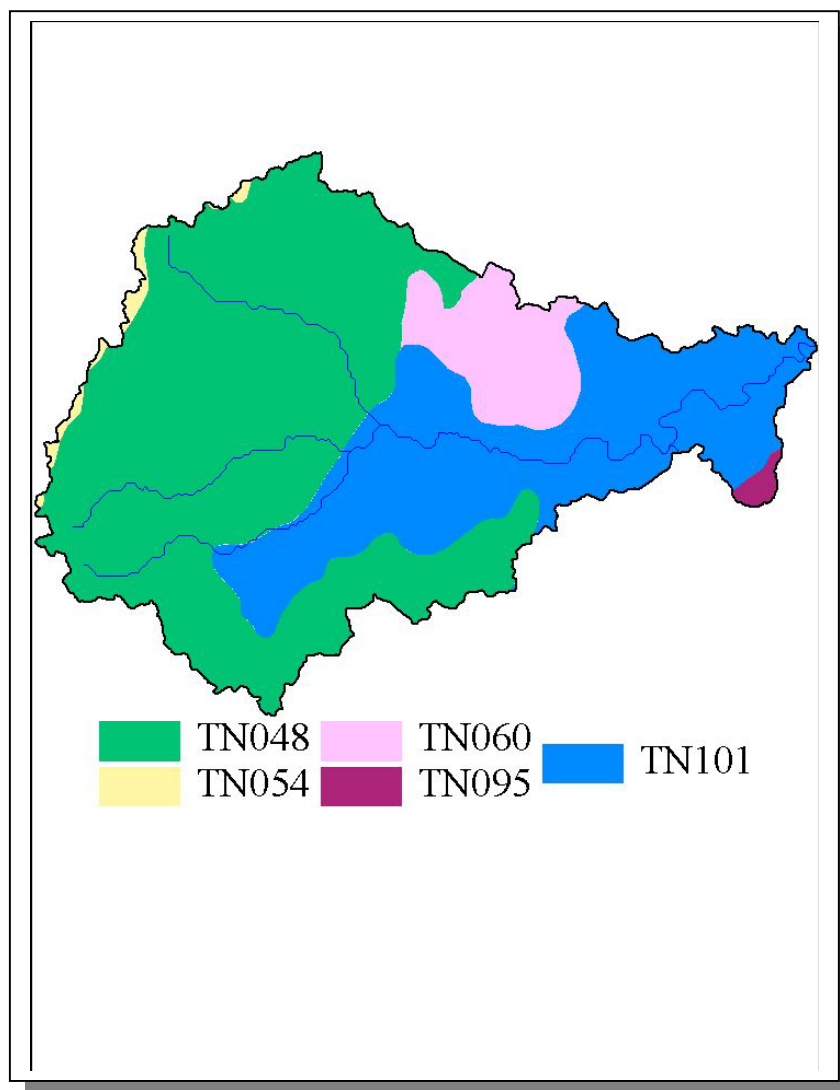
**4.2.B.i.** General Description.



**Figure 4-13. Illustration of Land Use Distribution in Subwatershed 0513010702.**



**Figure 4-14. Land Use Distribution in Subwatershed 0513010702.** More information is provided in Collins-Appendix IV.



**Figure 4-15. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 0513010702.**

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN048	16.00	C	1.38	5.06	Silty Loam	0.42
TN054	0.00	C	3.04	4.84	Loam	0.32
TN060	20.00	B	1.30	5.32	Silty Loam	0.39
TN095	0.00	B	2.35	5.12	Loam	0.31
TN101	0.00	B	1.71	5.39	Loam	0.35

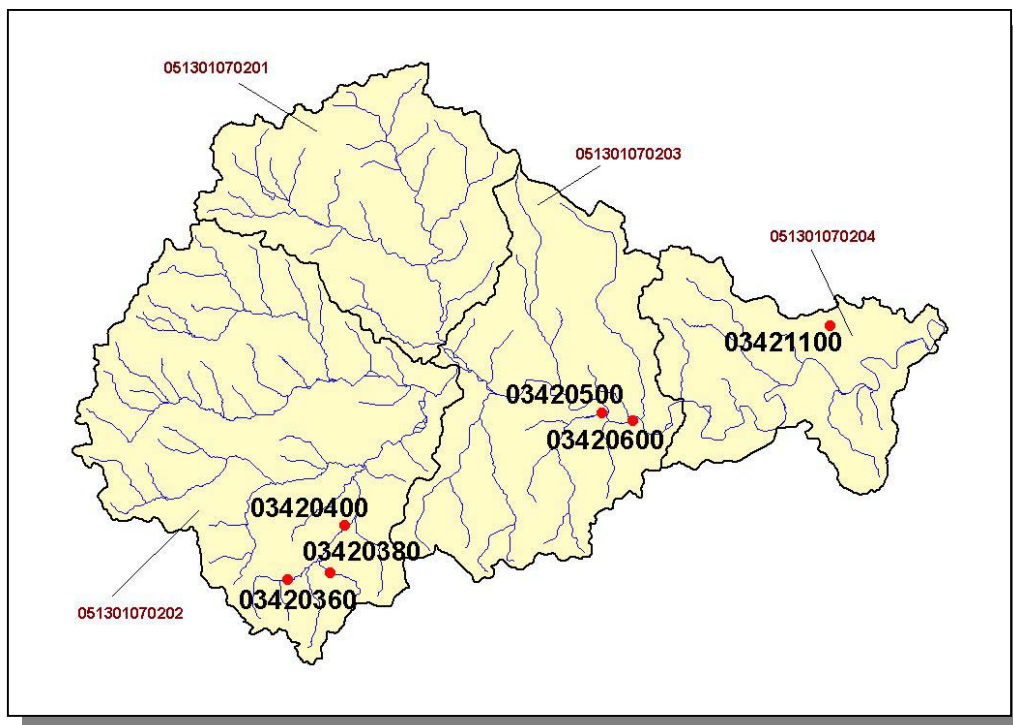
**Table 4-8. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 0513010702.** More information is provided in Collins-Appendix IV.

County	COUNTY POPULATION		Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED		% CHANGE
	1990	1997 Est.		1990	1997	
Cannon	10,467	12,011	19.22	2,012	2,309	14.8
Coffee	40,339	45,347	7.90	3,146	3,537	12.4
Warren	32,992	35,777	20.79	6,858	7,437	8.4
<b>Total</b>	<b>83,798</b>	<b>93,135</b>		<b>12,016</b>	<b>13,283</b>	<b>10.5</b>

*Table 4-9. Population Estimates in Subwatershed 0513010702.*

Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
Centertown	Warren	345	138	3	135	0
McMinnville	Warren	11,194	5,123	4,746	353	24
Morrison	Warren	557	235	195	37	3
<b>Total</b>		<b>12,096</b>	<b>5,496</b>	<b>4,944</b>	<b>525</b>	<b>27</b>

*Table 4-10. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 0513010702.*

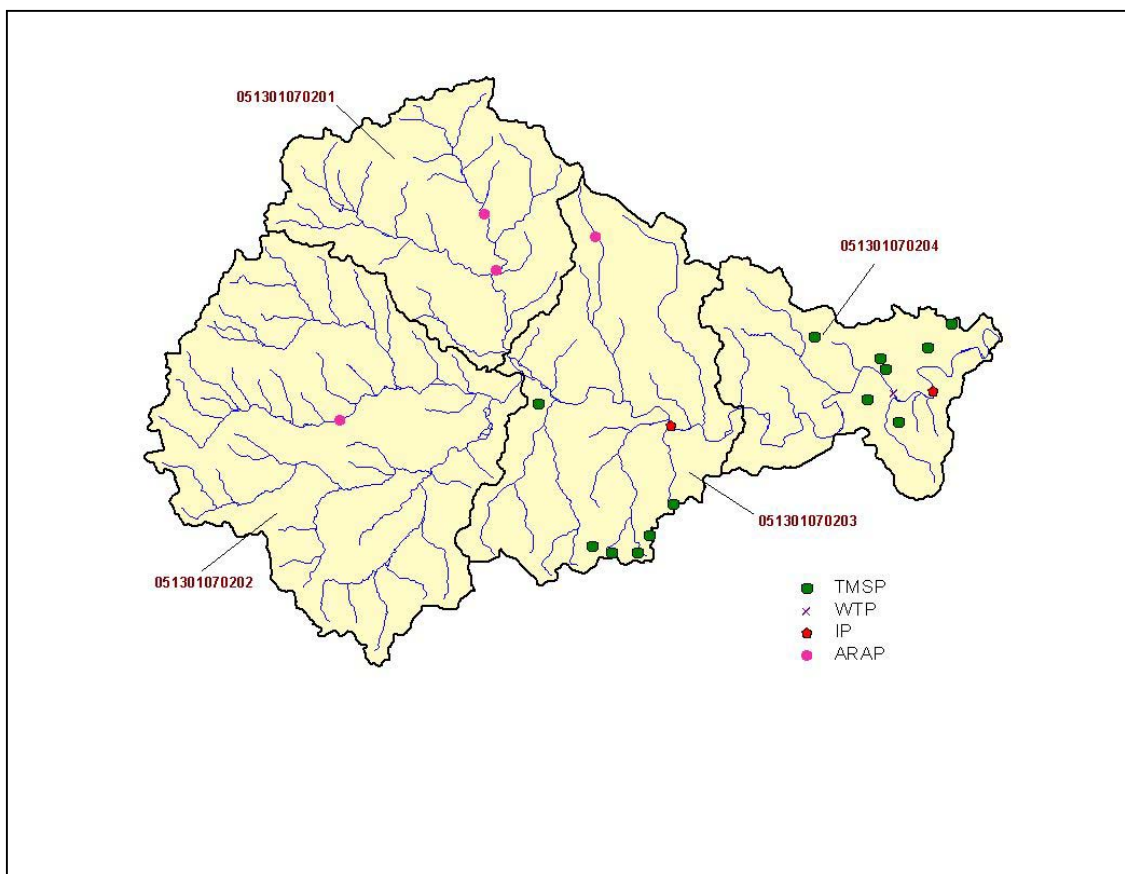


**Figure 4-16. Location of Historical Streamflow Data Collection Sites in Subwatershed 0513010702.** Subwatershed 051301070201, 051301040202, 051301070203 and 051301070204 boundaries are shown for reference. More information is provided in Collins-Appendix IV.

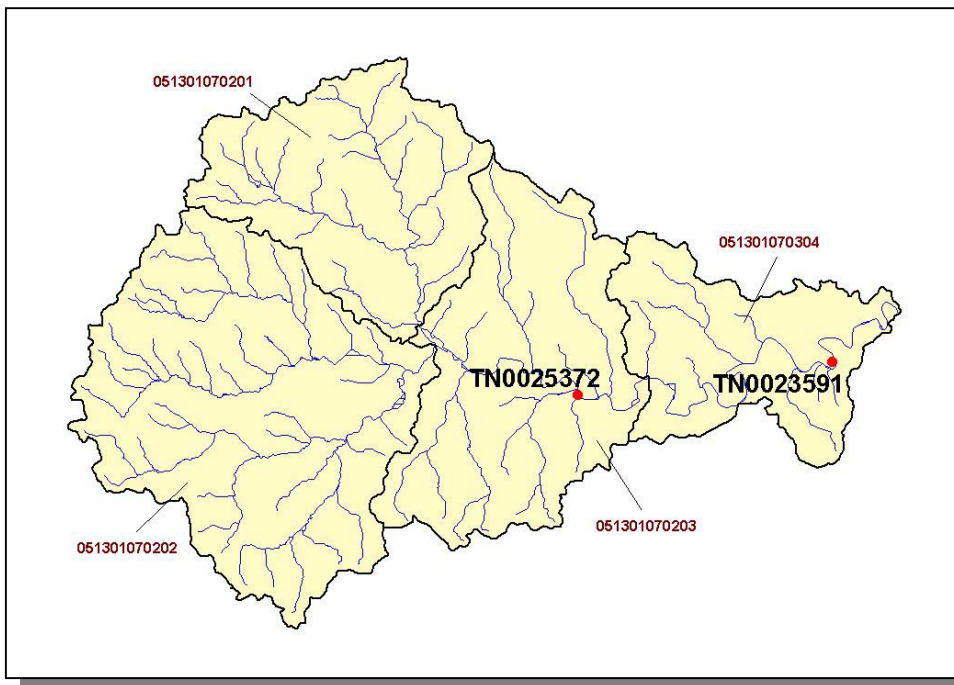


**Figure 4-17. Location of STORET Monitoring Sites in Subwatershed 0513010702.** Subwatershed 051301070201, 051301040202, 051301070203 and 051301070204 boundaries are shown for reference. More information is provided in Collins-Appendix IV.

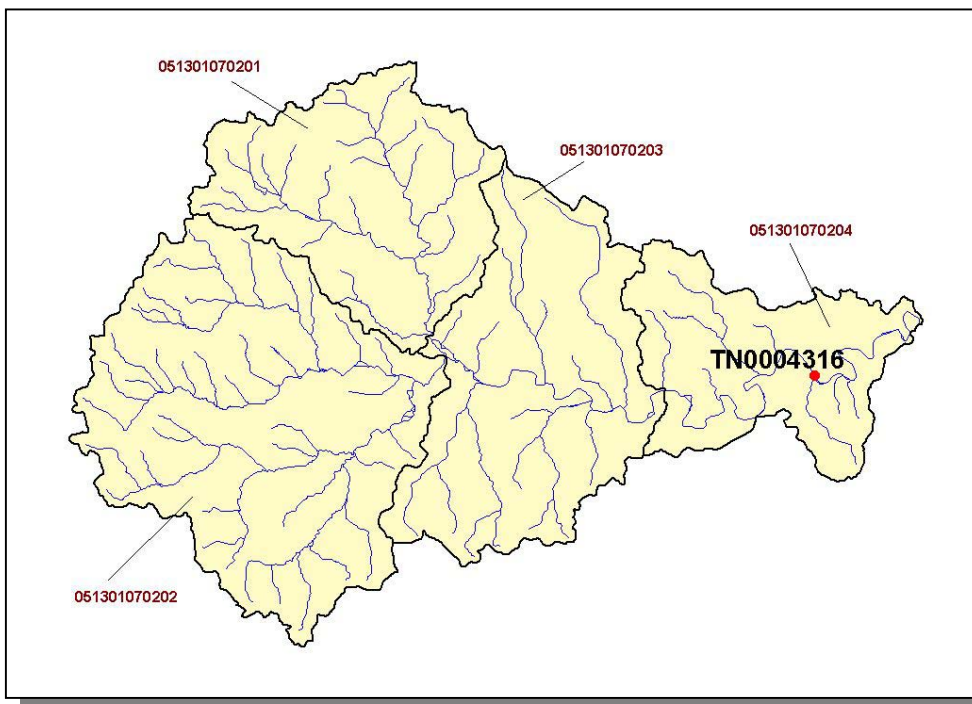
**4.2.B.ii.** Point Source Contributions.



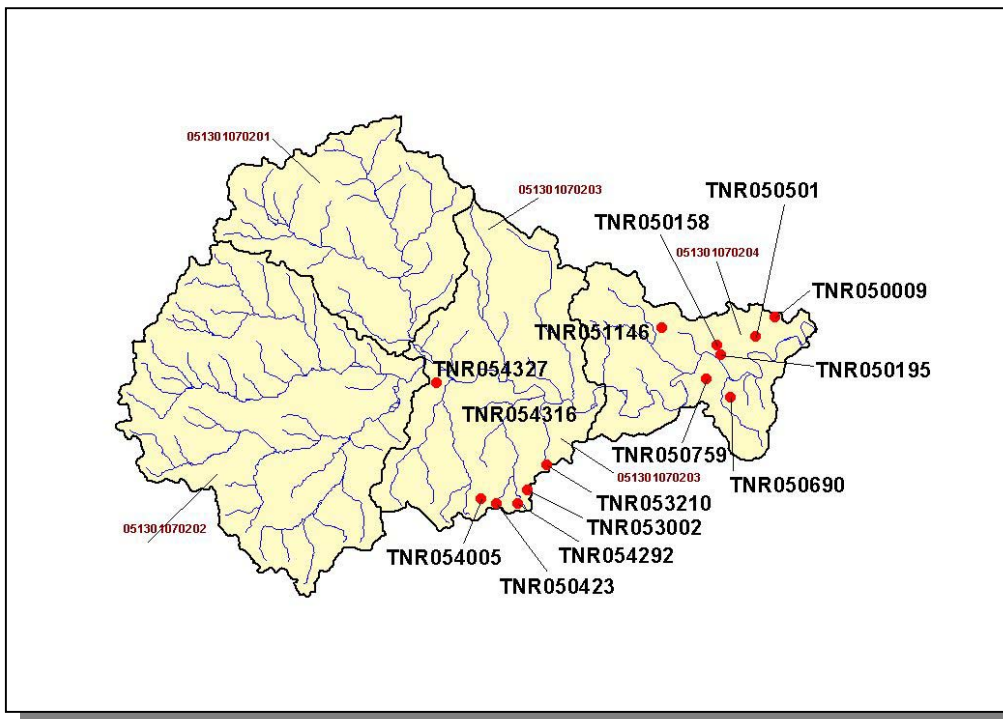
**Figure 4-18. Location of Active Point Source Facilities in Subwatershed 0513010702.** Subwatershed 051301070201, 051301040202, 051301070203 and 051301070204 boundaries are shown for reference. More information is provided in the following figures.



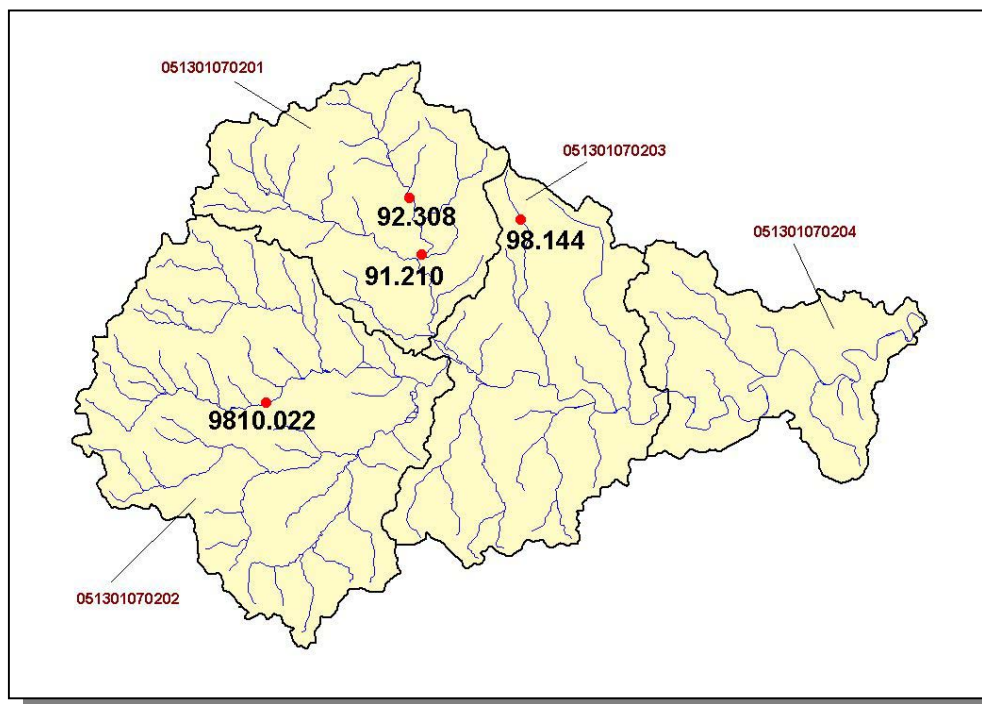
**Figure 4-19. Location of Active Point Source Facilities (Individual Permits) in Subwatershed 0513010702.** Subwatershed 051301070201, 051301040202, 051301070203 and 051301070204 boundaries are shown for reference. More information, including the names of facilities, is provided in Collins-Appendix IV.



**Figure 4-20. Location of Water Treatment Plant in Subwatershed 0513010702.** Subwatershed 051301070201, 051301040202, 051301070203 and 051301070204 boundaries are shown for reference. More information, including the names of facilities, is provided in Collins-Appendix IV.



**Figure 4-21. Location of TMSP Facilities in Subwatershed 0513010702.** Subwatershed 051301070201, 051301040202, 051301070203 and 051301070204 boundaries are shown for reference. More information, including the names of facilities, is provided in Collins-Appendix IV.



**Figure 4-22. Location of ARAP Sites (Individual Permits) in Subwatershed 0513010702.** Subwatershed 051301070201, 051301040202, 051301070203 and 051301070204 boundaries are shown for reference. More information, including the names of facilities, is provided in Collins-Appendix IV.

**4.2.B.iii.** Nonpoint Source Contributions.

<b>LIVESTOCK (COUNTS)</b>						
Beef Cow	Cattle	Milk Cow	Chickens	Chickens Sold	Hogs	Sheep
10,094	21,831	1,367	26	387,447	2,412	108

**Table 4-11. Summary of Livestock Count Estimates in Subwatershed 0513010702.**  
According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.

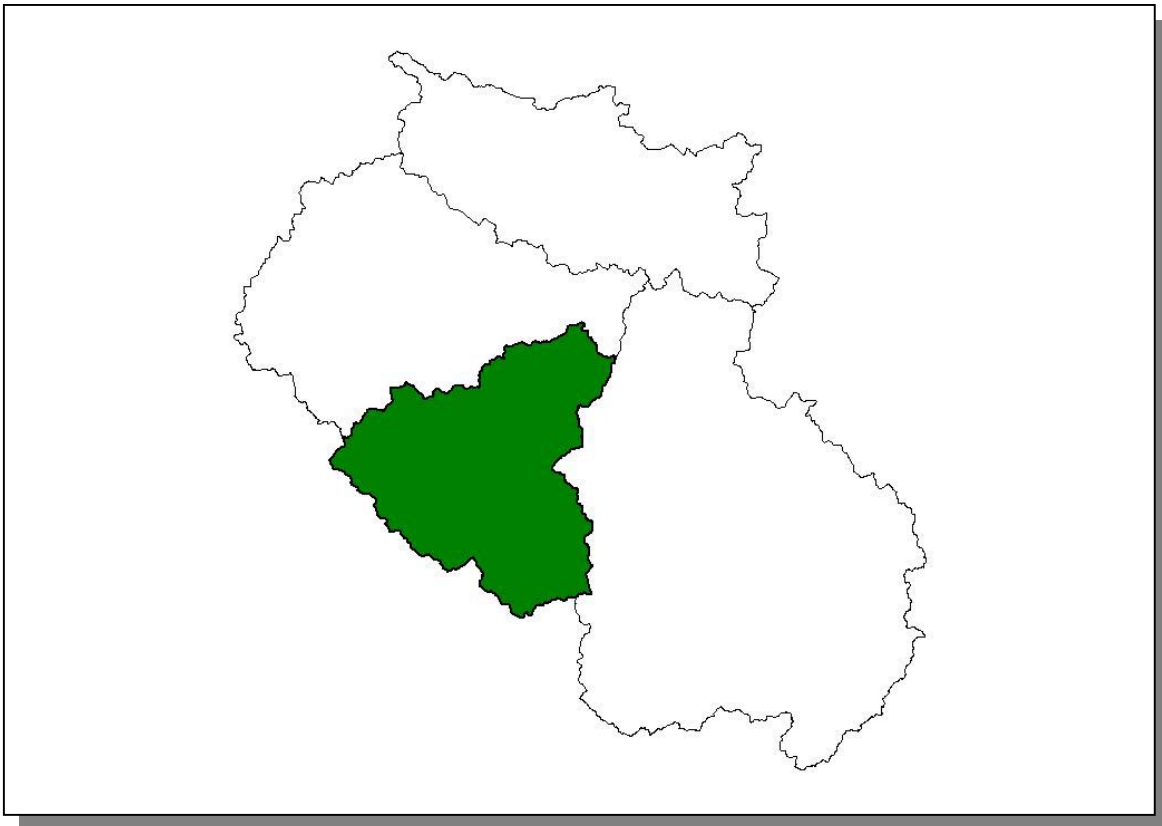
County	<b>INVENTORY</b>		<b>REMOVAL RATE</b>	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Cannon	88.5	88.5	1.7	7.1
Coffee	114.4	114.2	2.8	12.7
Warren	93.6	93.6	2.4	10.1
<b>Total</b>	<b>296.5</b>	<b>301.4</b>	<b>6.9</b>	<b>29.9</b>

**Table 4-12. Forest Acreage and Average Annual Removal Rates (1987-1994) in Subwatershed 0513010702.**

<b>CROPS</b>	<b>TONS/ACRE/YEAR</b>
Legume/Grass (Hayland)	2.66
Forest Land (Grazed)	0.00
Forest Land (Not Grazed)	0.00
Farmsteads and Ranch Headquarters	0.42
Non Agricultural Land Use	0.00
Corn (Row Crops)	8.92
Soybeans (Row Crops)	13.36
Cotton (Row Crops)	4.03
Wheat (Close Grown Cropland)	8.92
Grass (Hayland)	0.82
Legume (Hayland)	0.10
Legume (Pastureland)	0.37
Other (Horticulture)	13.98
Grass (Pastureland)	0.53
Grass, Forbs, Legumes (Mixed Pasture)	0.58
Conservation Reserve Lands	0.28
Other Vegetable and Truck Crop	0.37
Other Cropland not Planted	6.68

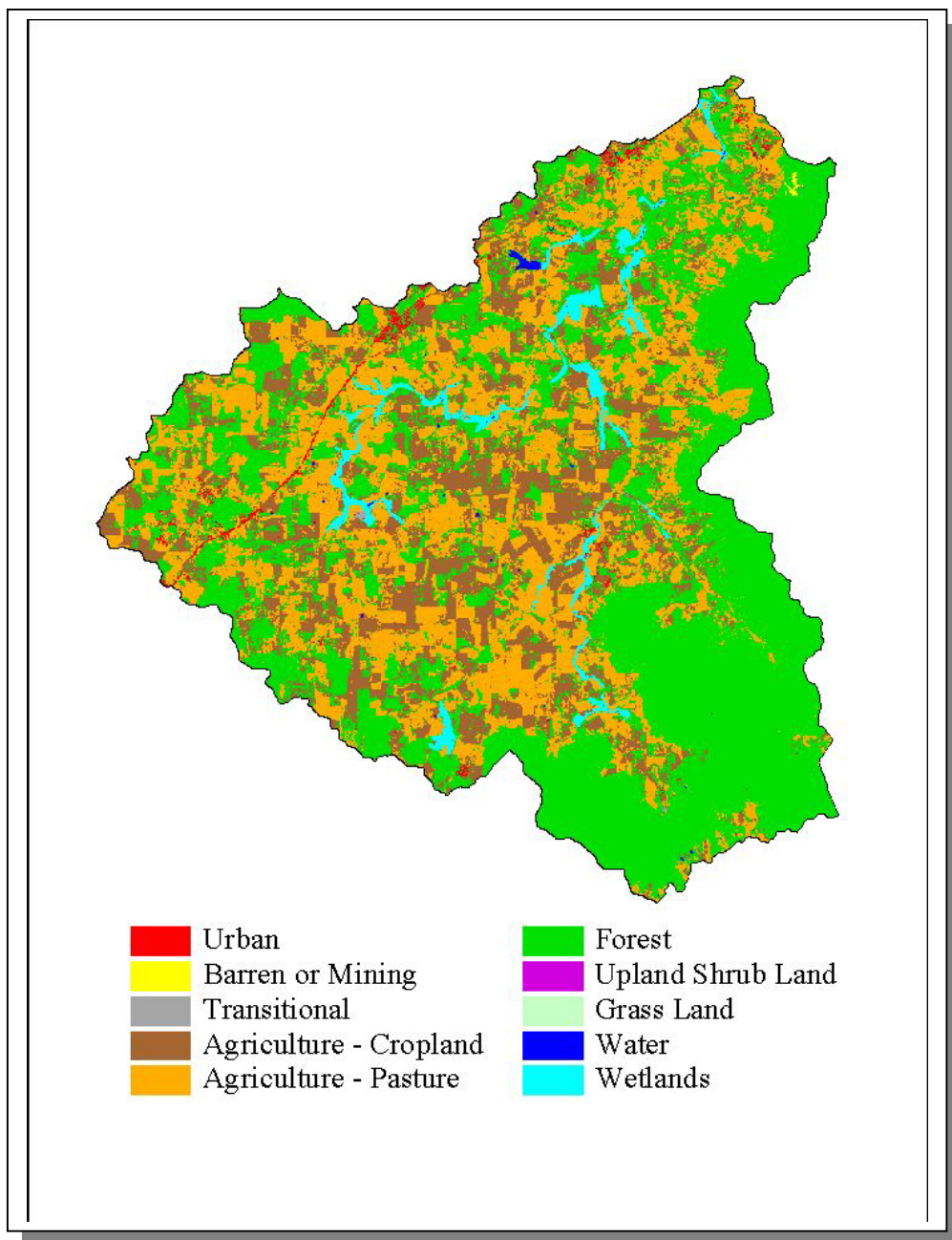
**Table 4-13. Annual Estimated Total Soil Loss in Subwatershed 0513010702.**

**4.2.C. 0513010703.**

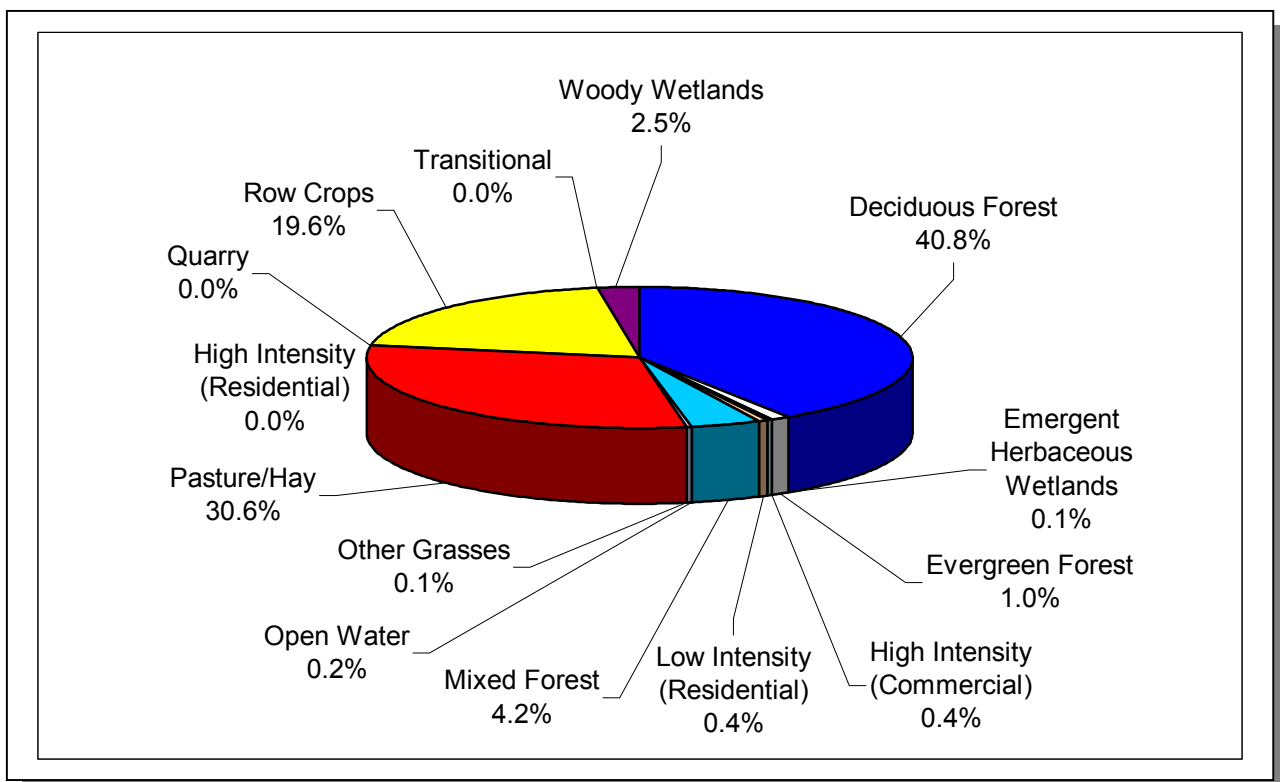


**Figure 4-23. Location of Subwatershed 0513010703.** All Collins HUC-10 subwatershed boundaries are shown for reference.

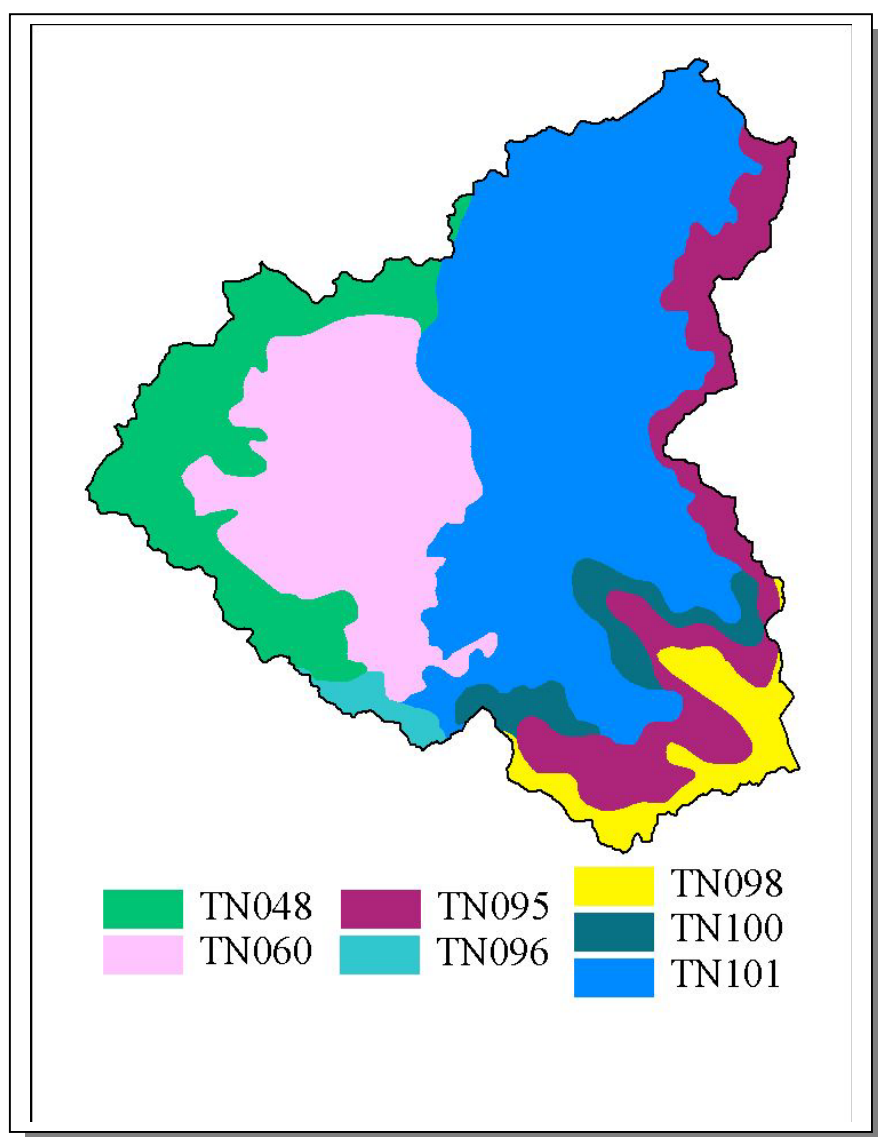
4.2.C.i. General Description.



*Figure 4-24. Illustration of Land Use Distribution in Subwatershed 0513010703.*



**Figure 4-25. Land Use Distribution in Subwatershed 0513010703.** More information is provided in Collins-Appendix IV.



**Figure 4-26. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 0513010703.**

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN048	8.00	C	1.38	5.06	Silty Loam	0.42
TN060	5.00	B	1.30	5.32	Silty Loam	0.39
TN095	0.00	B	2.35	5.12	Loam	0.31
TN096	1.00	C	1.22	5.16	Silty Loam	0.38
TN098	1.00	C	3.98	4.82	Loam	0.32
TN100	0.00	B	1.14	3.35	Silty Loam	0.21
TN101	0.00	B	1.71	5.39	Loam	0.35

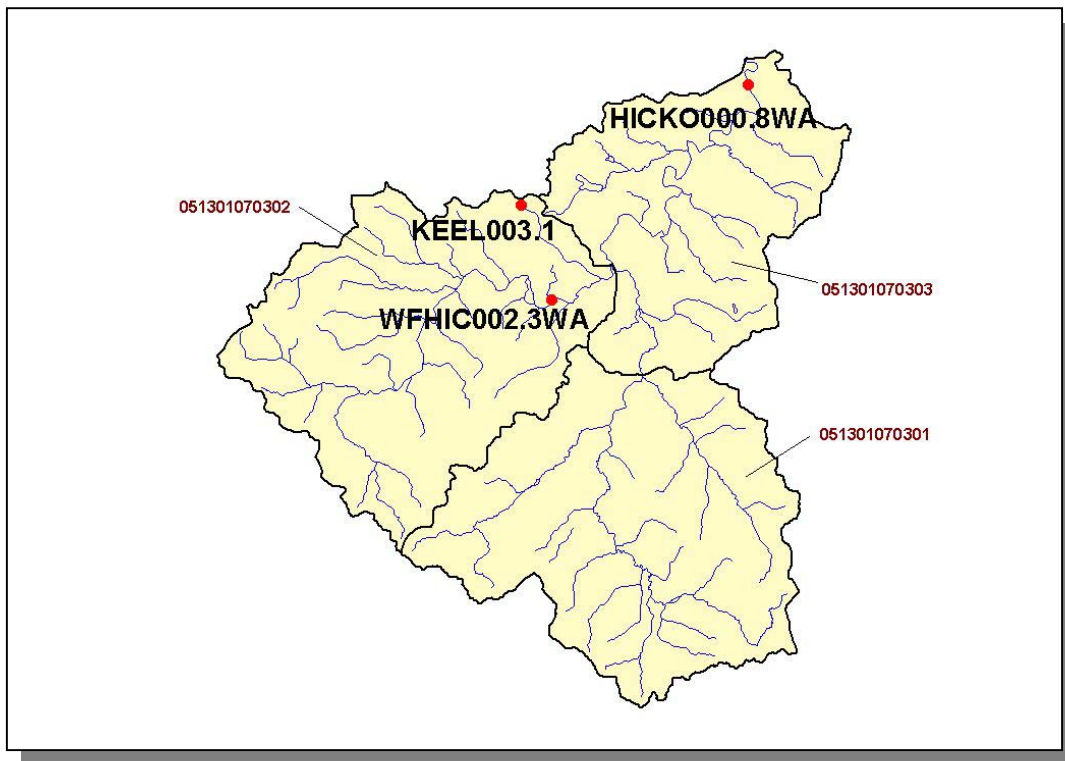
**Table 4-14. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 0513010703.** More information is provided in Collins-Appendix IV.

County	COUNTY POPULATION		Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED		% CHANGE
	1990	1997 Est.		1990	1997	
Coffee	40,339	45,347	10.72	4,324	4,861	12.4
Grundy	13,362	14,012	8.27	1,104	1,158	4.9
Warren	32,992	35,777	12.83	4,233	4,590	8.4
<b>Total</b>	<b>86, 693</b>	<b>95,136</b>		<b>9,661</b>	<b>10,609</b>	<b>9.8</b>

*Table 4-15. Population Estimates in Subwatershed 0513010703.*

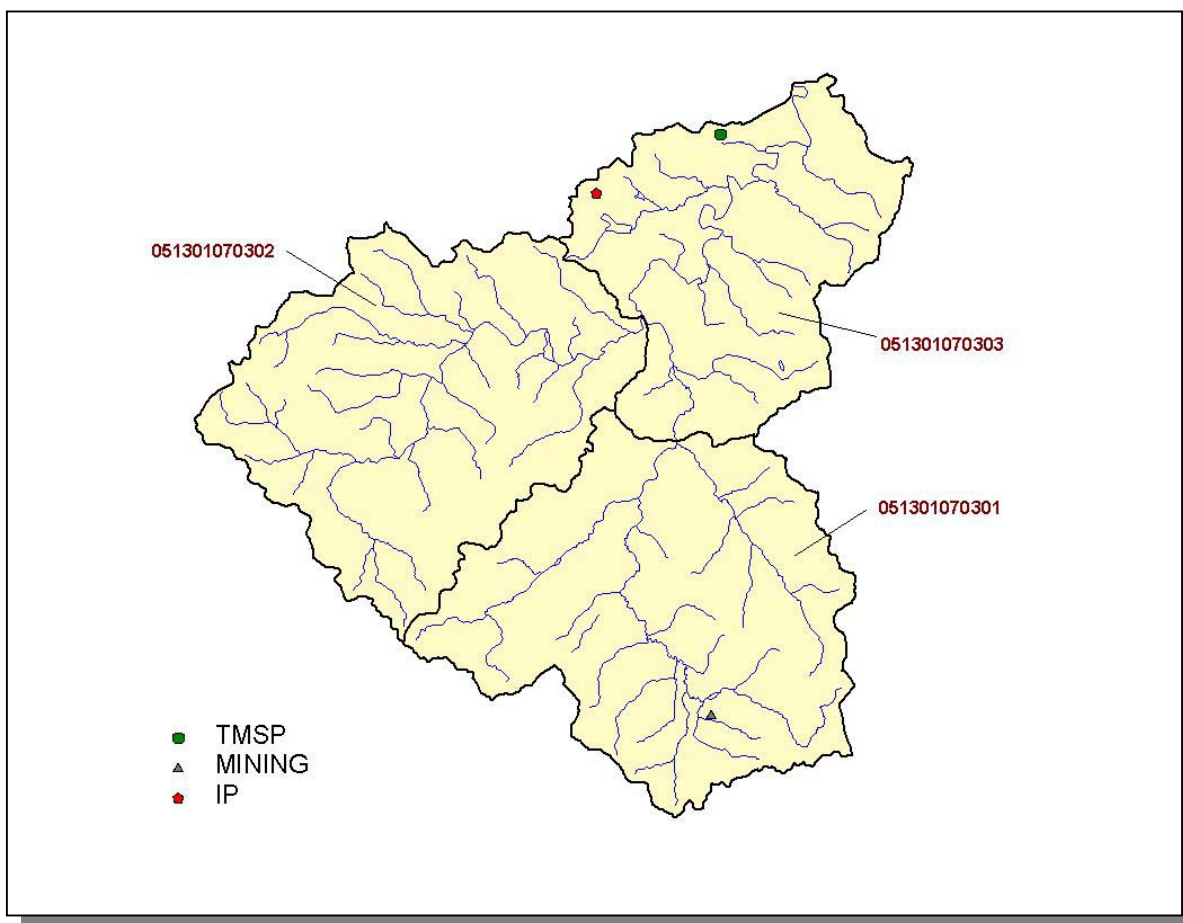
Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
McMinnville	Warren	11,194	5,123	4,746	353	24
Morrison	Warren	557	235	195	37	3
Viola	Warren	123	53	2	48	3
<b>Totals</b>		<b>11,874</b>	<b>5,411</b>	<b>4,943</b>	<b>438</b>	<b>30</b>

*Table 4-16. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 0513010703.*

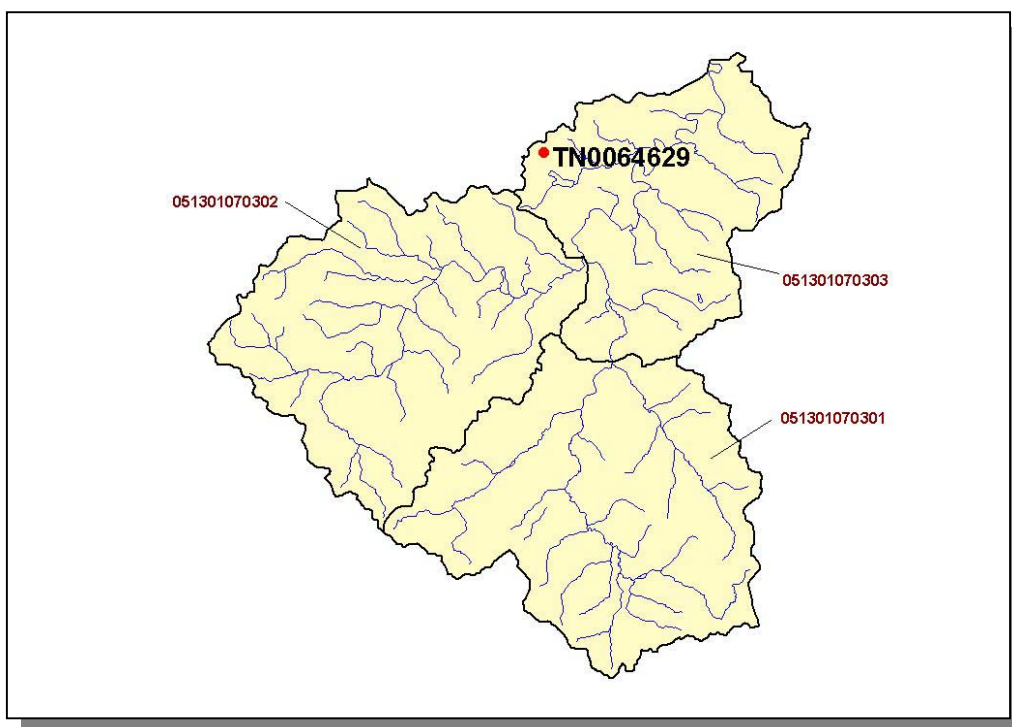


**Figure 4-27. Location of STORET Monitoring Sites in Subwatershed 0513010703.** Subwatershed 051301070301, 051301070302, and 051301070303 boundaries are shown for reference. More information is provided in Collins-Appendix IV.

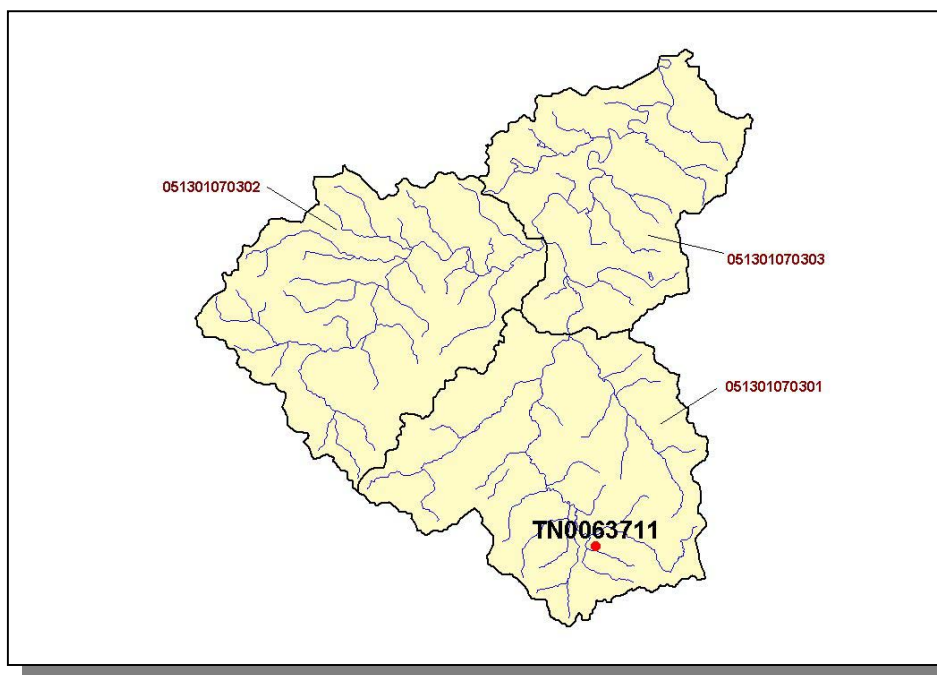
**4.2.C.ii.** Point Source Contributions.



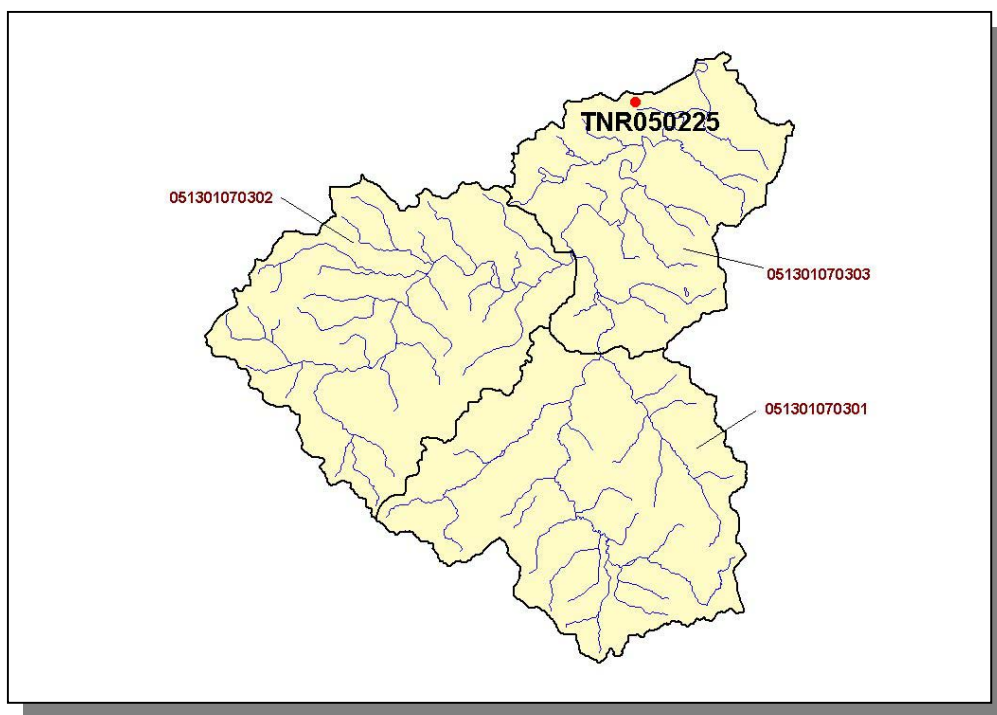
**Figure 4-28. Location of Active Point Source Facilities in Subwatershed 0513010703.** Subwatershed 051301070301, 051301070302, and 051301070303 boundaries are shown for reference. More information is provided in the following figures.



**Figure 4-29. Location of Active Point Source Facilities (Individual Permits) in Subwatershed 0513010703.** Subwatershed 051301070301, 051301070302, and 051301070303 boundaries are shown for reference. More information, including the names of facilities, is provided in Collins-Appendix IV.



**Figure 4-30. Location of Active Mining Sites in Subwatershed 0513010703.** Subwatershed 051301070301, 051301070302, and 051301070303 boundaries are shown for reference. More information, including the names of facilities, is provided in Collins-Appendix IV.



**Figure 4-31. Location of TMSP Facilities in Subwatershed 0513010703.** Subwatershed 051301070301, 051301070302, and 051301070303 boundaries are shown for reference. More information, including the names of facilities, is provided in Collins-Appendix IV.

**4.2.C.iii.** Nonpoint Source Contributions.

<b>LIVESTOCK (COUNTS)</b>						
Beef Cow	Cattle	Milk Cow	Chickens	Chickens Sold	Hogs	Sheep
5,880	13,366	976	13	3,008,668	1,206	62

**Table 4-17. Summary of Livestock Count Estimates in Subwatershed 0513010703.**  
According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.

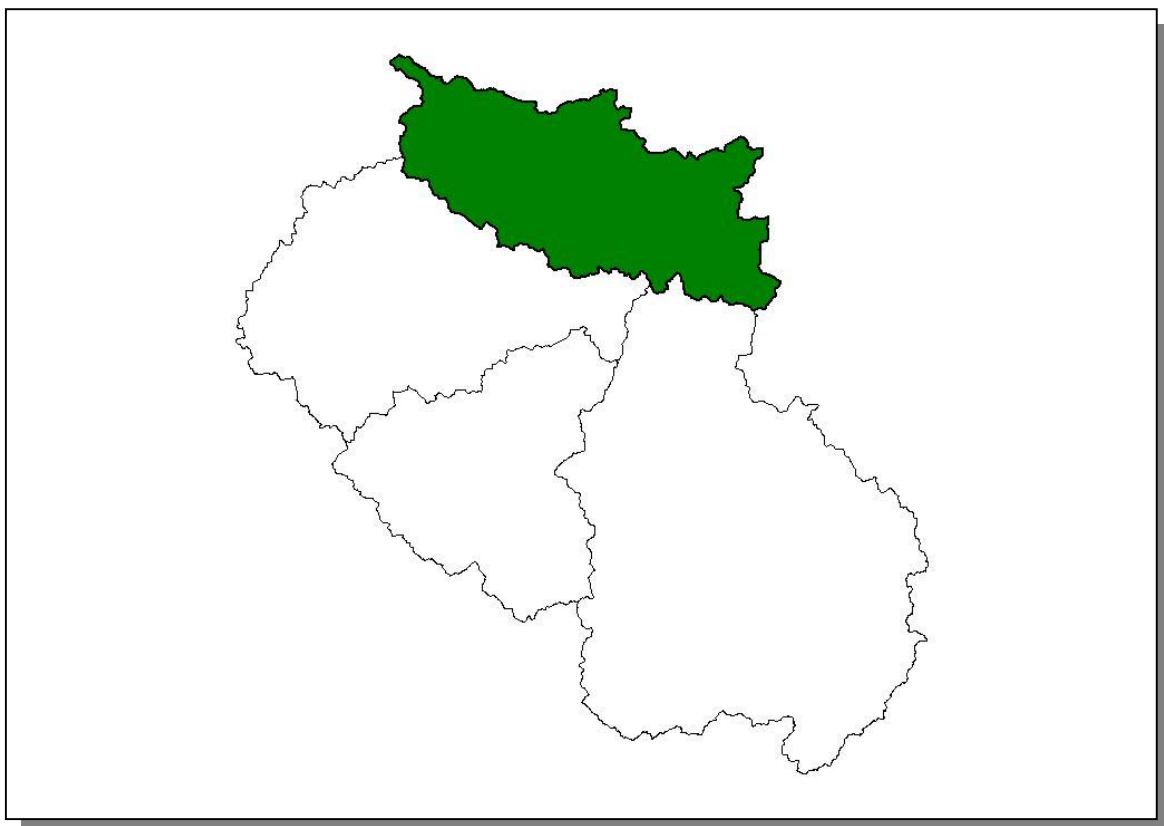
County	<b>INVENTORY</b>		<b>REMOVAL RATE</b>	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Coffee	114.4	114.2	2.8	12.7
Grundy	174.5	165.9	5.6	17.7
Warren	93.6	93.6	2.4	10.1
<b>Totals</b>	<b>382.5</b>	<b>373.7</b>	<b>10.8</b>	<b>40.5</b>

**Table 4-18. Forest Acreage and Average Annual Removal Rates (1987-1994) in Subwatershed 0513010703.**

<b>CROPS</b>	<b>TONS/ACRE/YEAR</b>
Corn (Row Crops)	8.69
Soybeans (Row Crops)	14.24
Nonagricultural Land Use	0.00
Legume (Hayland)	0.10
Grass (Hayland)	0.75
Grass (Pastureland)	0.82
Grass, Forbs, Legumes (Mixed Pasture)	0.42
Forest Land (Grazed)	0.00
Forest Land (Not Grazed)	0.00
Farmsteads and Ranch Headquarters	0.18
Cotton (Row Crops)	4.03
Other Vegetable and Truck Crop	4.37
Other Cropland not Planted	6.68
Wheat (Close Grown Cropland)	11.80
Conservation Reserve Program Land	0.24
Other (Horticultural)	10.75

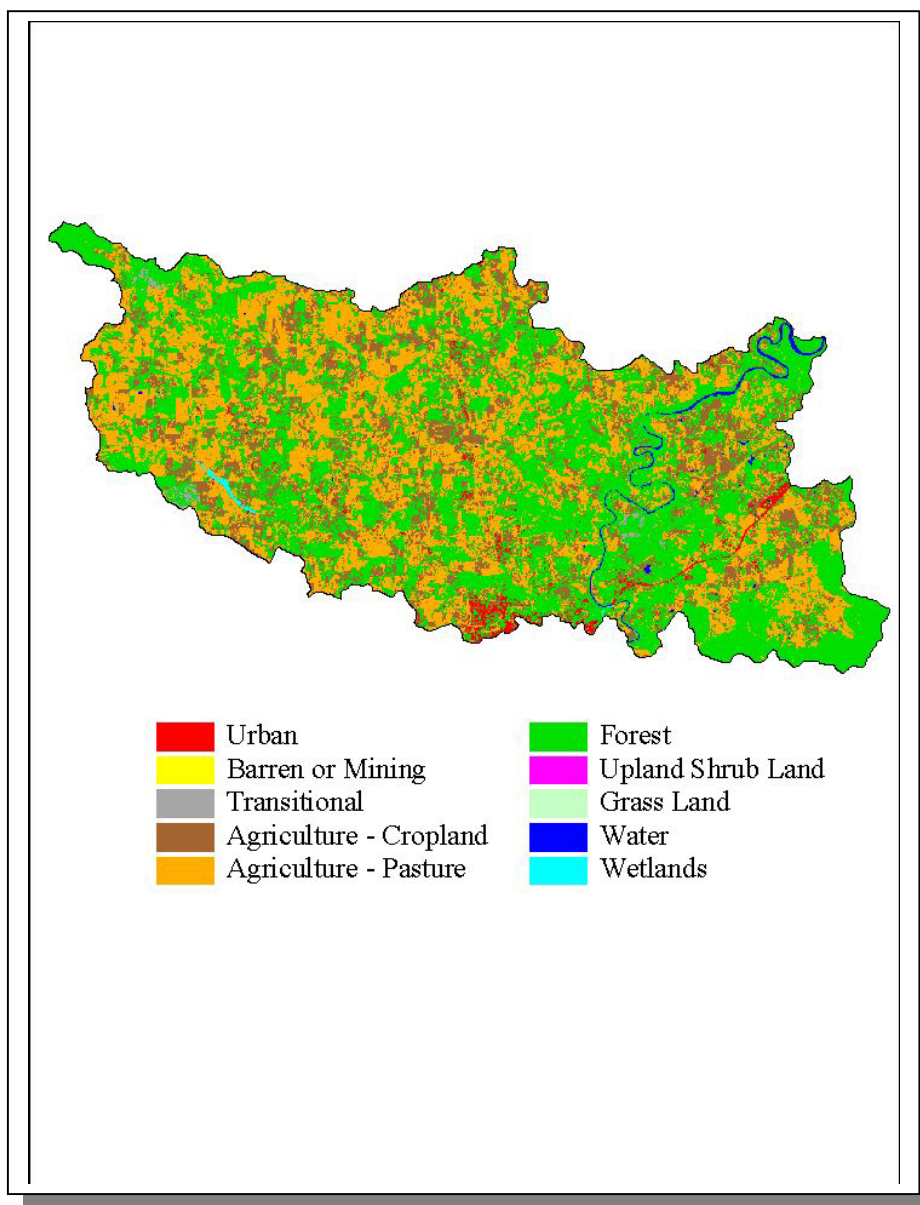
**Table 4-19. Annual Estimated Total Soil Loss in Subwatershed 0513010703.**

**4.2.D. 0513010704.**

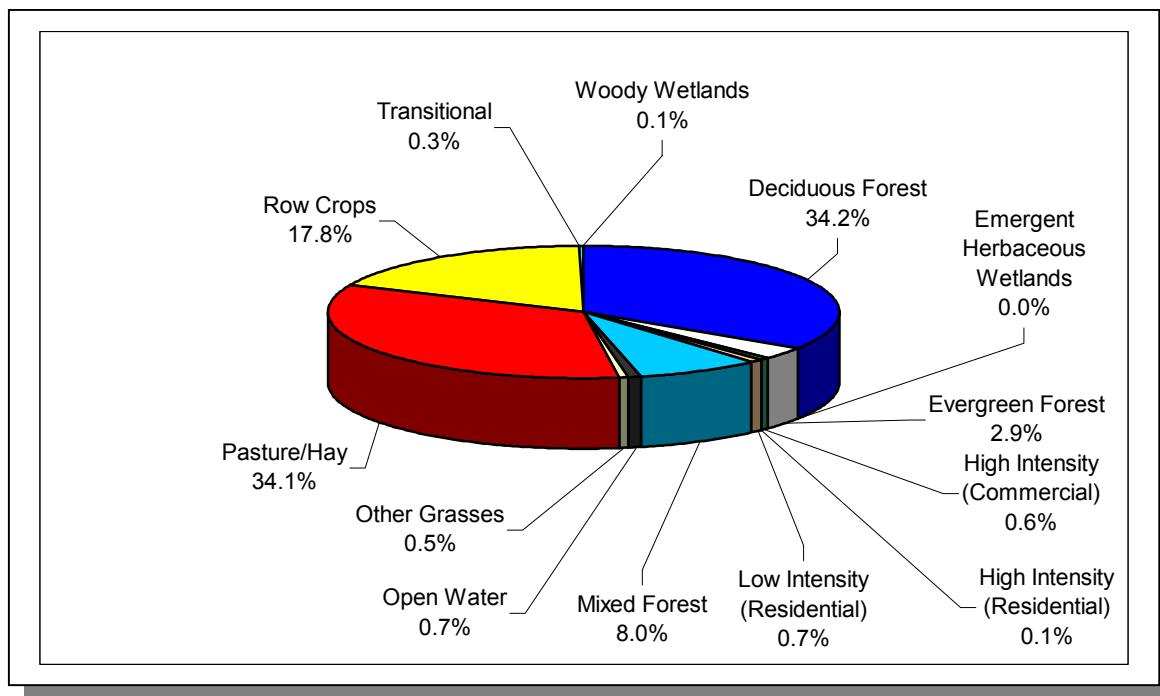


**Figure 4-32. Location of Subwatershed 0513010704.** All Collins HUC-10 subwatershed boundaries are shown for reference.

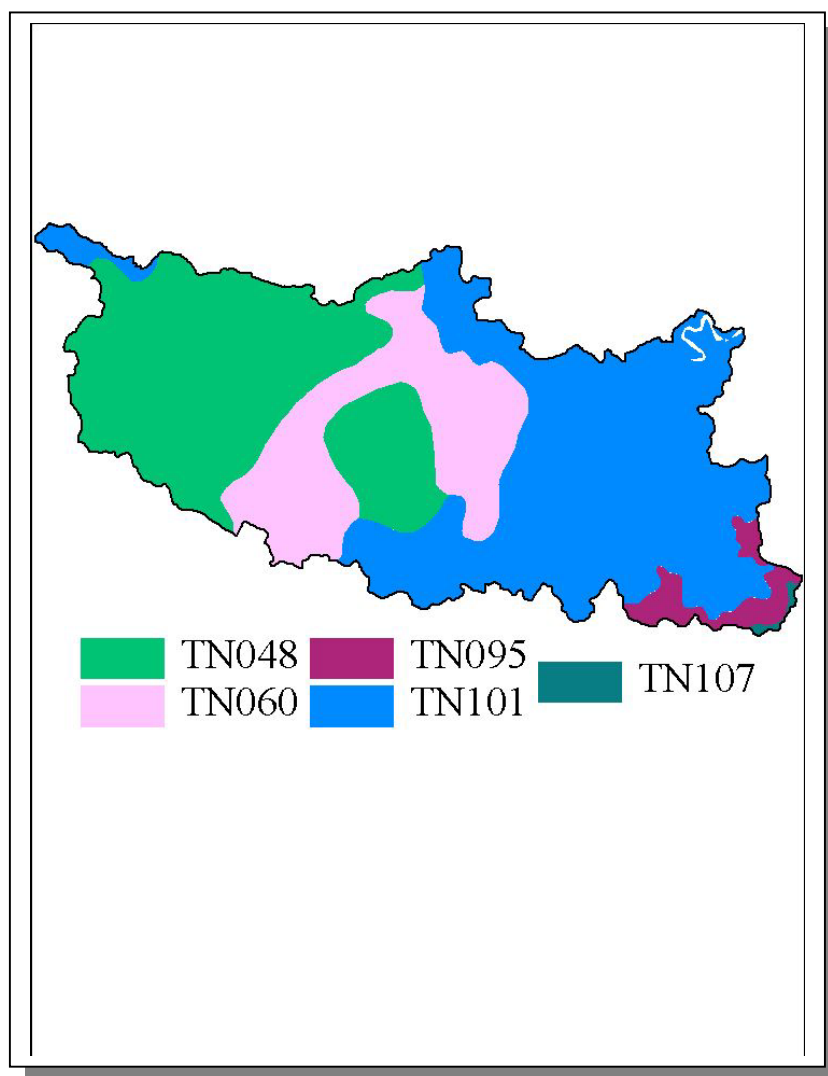
4.2.D.i. General Description.



*Figure 4-33. Illustration of Land Use Distribution in Subwatershed 0513010704.*



**Figure 4-34. Land Use Distribution in Subwatershed 0513010704.** More information is provided in Collins-Appendix IV.



**Figure 4-35. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 0513010704.**

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN048	8.00	C	1.38	5.06	Silty Loam	0.42
TN060	5.00	B	1.30	5.32	Silty Loam	0.39
TN095	0.00	B	2.35	5.12	Loam	0.31
TN101	0.00	B	1.71	5.39	Loam	0.35
TN107	1.00	C	6.34	4.84	Loam	0.28

**Table 4-20. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 0513010704.** More information is provided in Collins-Appendix IV.

County	COUNTY POPULATION		Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED		% CHANGE
	1990	1997 Est.		1990	1997	
Cannon	10,467	12,011	4.95	519	595	14.6
Warren	32,992	35,777	30.47	10,053	10,901	8.4
<b>Total</b>	<b>43,459</b>	<b>47,788</b>		<b>10,572</b>	<b>11,496</b>	<b>8.7</b>

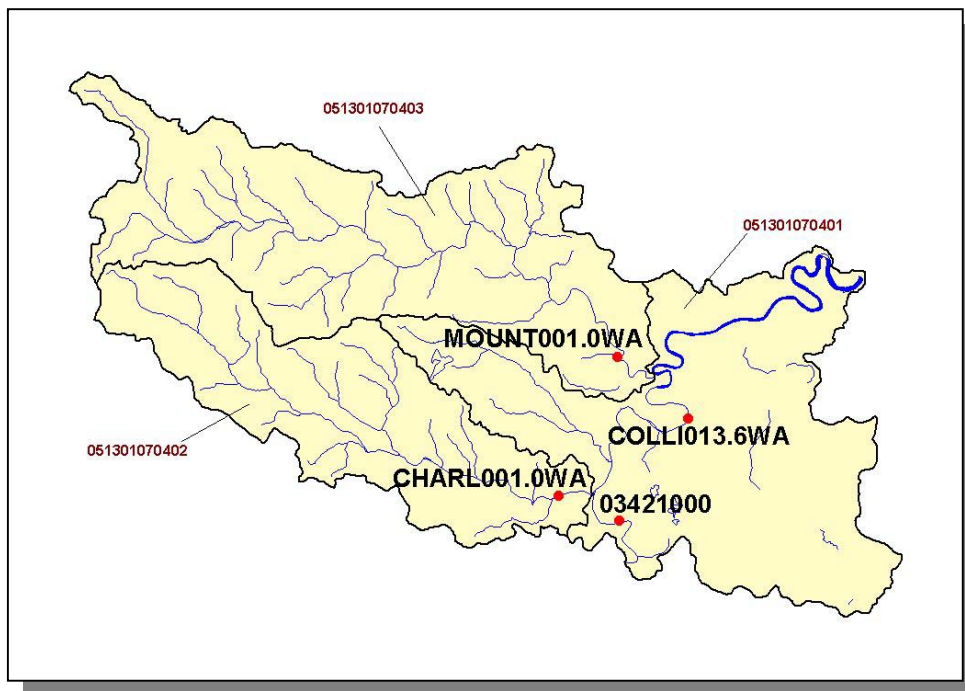
*Table 4-21. Population Estimates in Subwatershed 0513010704.*

			NUMBER OF HOUSING UNITS			
Populated Place	County	Population	Total	Public Sewer	Septic Tank	Other
McMinnville	Warren	11,194	5,123	4,746	353	24

*Table 4-22. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 0513010704.*

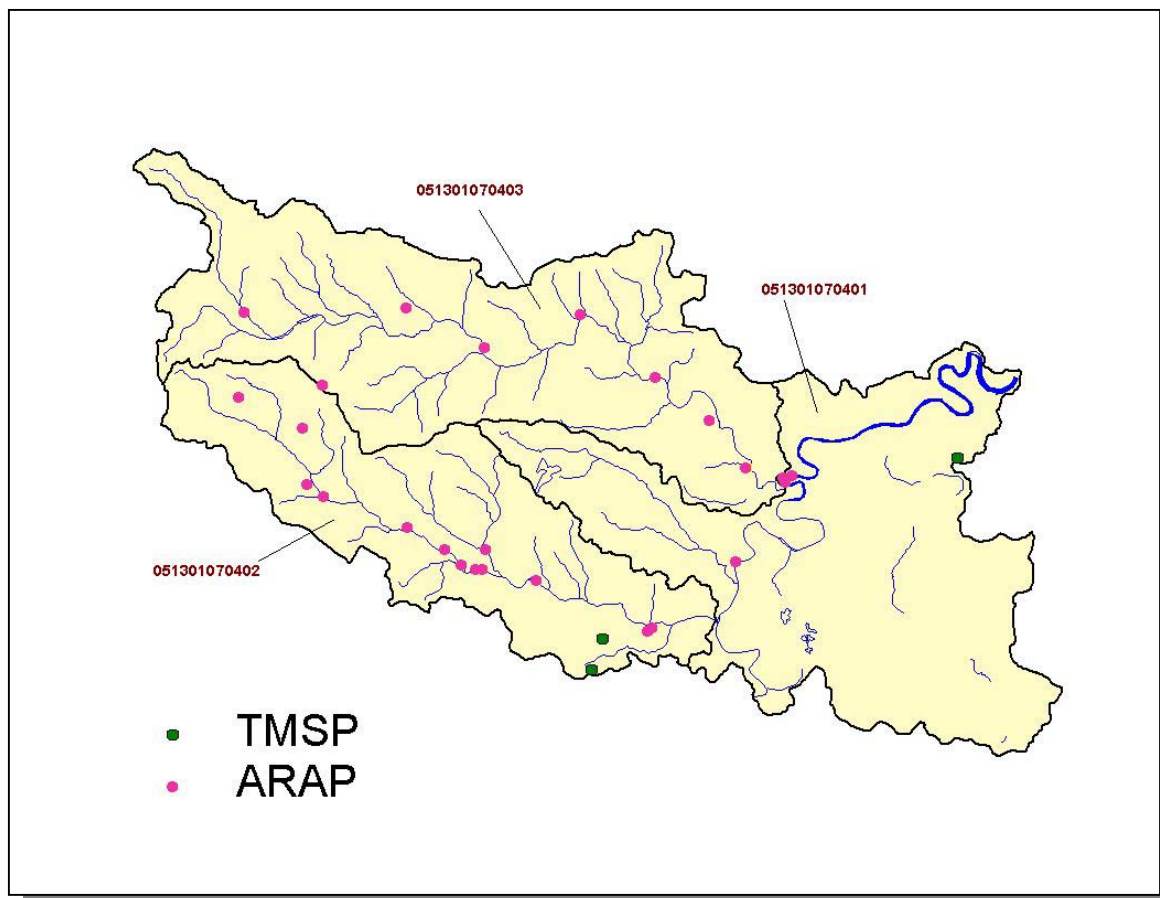


**Figure 4-36. Location of Historical Streamflow Data Collection Sites in Subwatershed 0513010704.** Subwatershed 051301070401, 051301070402 and 051301070403 boundaries are shown for reference. More information is provided in Collins-Appendix IV.

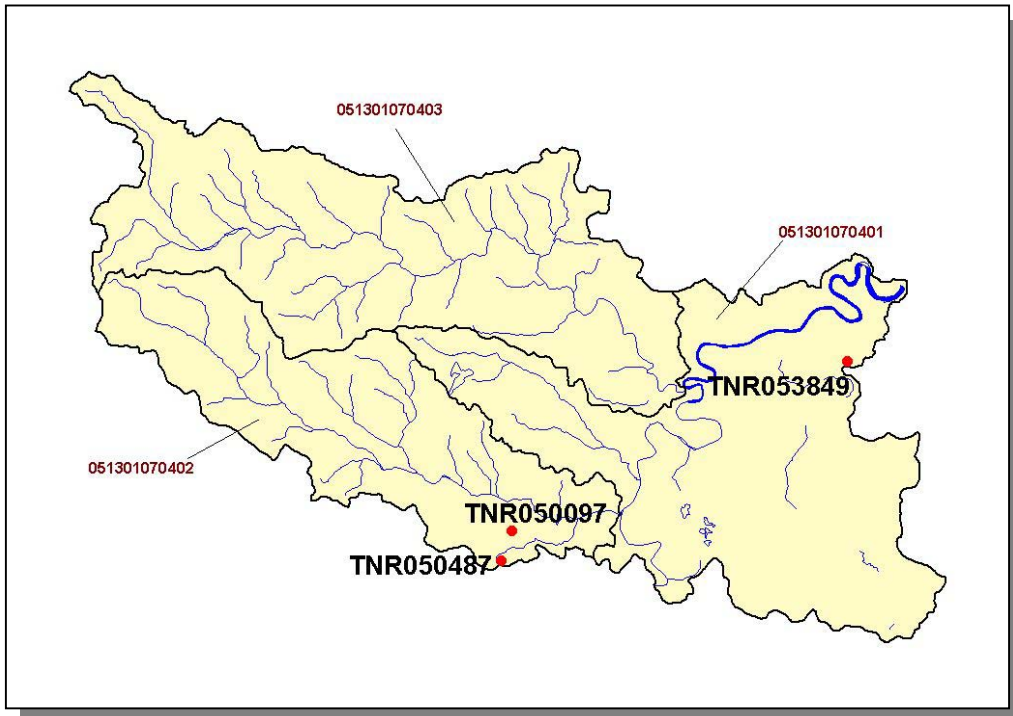


**Figure 4-37. Location of STORET Monitoring Sites in Subwatershed 0513010704.** Subwatershed 051301070401, 051301070402 and 051301070403 boundaries are shown for reference. More information is provided in Collins-Appendix IV.

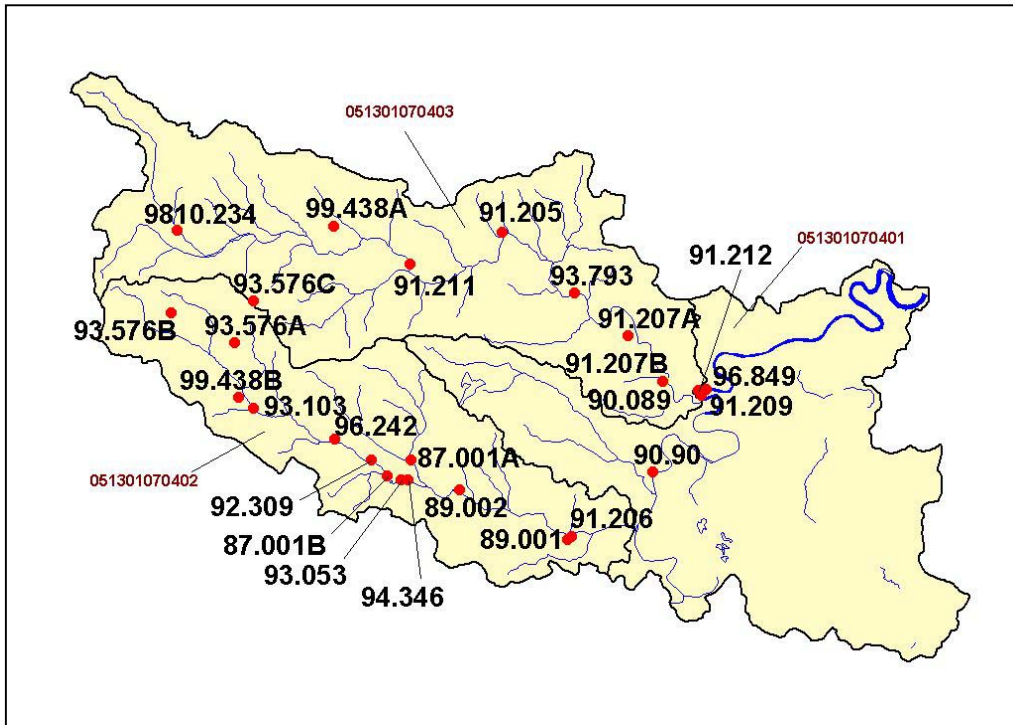
4.2.D.ii. Point Source Contributions.



**Figure 4-38. Location of Active Point Source Facilities in Subwatershed 0513010704.** Subwatershed 051301070401, 051301070402 and 051301070403 boundaries are shown for reference. More information is provided in the following figures.



**Figure 4-39. Location of TMSP Facilities in Subwatershed 0513010704.** Subwatershed 051301070401, 051301070402 and 051301070403 boundaries are shown for reference. More information is provided in Collins-Appendix IV.



**Figure 4-40. Location of ARAP Sites (Individual Permits) in Subwatershed 0513010704.** Subwatershed 051301070401, 051301070402 and 051301070403 boundaries are shown for reference. More information is provided in Collins-Appendix IV.

**4.2.D.iii. Nonpoint Source Contributions.**

<b>LIVESTOCK (COUNTS)</b>						
Beef Cow	Milk Cow	Cattle	Chickens	Chickens Sold	Hogs	Sheep
8,178	956	16,692	16	0	1,294	58

Table 4-23. Summary of Livestock Count Estimates in Subwatershed 0513010704. According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.

County	<b>INVENTORY</b>		<b>REMOVAL RATE</b>	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Cannon	88.5	88.5	1.7	7.1
Warren	93.6	93.6	2.4	10.1
Total	182.1	182.1	4.1	17.2

**Table 4-24. Forest Acreage and Average Annual Removal Rates (1987-1994) in Subwatershed 0513010704.**

<b>CROPS</b>	<b>TONS/ACRE/YEAR</b>
Forest Land (Grazed)	0.00
Forest Land (Not Grazed)	0.00
Farmsteads and Ranch Headquarters	0.22
Non Agricultural Land Use	0.00
Corn (Row Crops)	8.77
Soybeans (Row Crops)	16.50
Tobacco (Row Crops)	8.97
Wheat (Close Grown Cropland)	9.54
Legume/Grass (Hayland)	4.37
Grass (Hayland)	0.92
Legume (Hayland)	0.10
Other Cropland not Planted	1.86
Grass (Pastureland)	0.30
Grass, Forbs, Legumes (Mixed Pasture)	0.59
Conservation Reserve Program Land	0.33
Legume (Pastureland)	0.37
Other (Horticulture)	13.97

**Table 4-25. Annual Soil Loss in Subwatershed 0513010704.**